THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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SPECIAL MEETING OF COUNCIL.

A special meeting of Council was held on Tuesday last to confirm the following alteration of Bye-law 20. passed at a meeting held on the 23rd ult., viz.—

"That the examiners to be elected at the forthcoming election only remain in office until the Four Years Course comes into operation."

This rule, although it leads to the trouble and inconvience of another election of examiners very shortly, will be found useful in two years time. The four-years-course breaks up some of the subjects now examined on at one table, and it introduces other subjects not now provided for separately. There would be great confusion if the Council could not when the change comes elect the whole Board; as the alternative would be the transfer of some examiners from one subject to another, and a request to others to resign. There will be a less number of examiners under the four years scheme than we now have.

BRONCHO OR *PLEURO* PNEUMONIA?

The report of the last meeting of the Scottish Metropolitan V.M.S. which we publish this week is interesting. The battle of Cornstalk versus Pleuro has been raging for many weeks in North Britain, and both sides have been looking forward to some fresh developments as the result of further microscopical examinations. The Secretary of the Scottish Metropolitan V.M.S. received from Professor Williams some portions of lung removed from a Canadian beast condemned by the Board of Agriculture as suffering from pleuro-pneumonia. Professor Williams alleges the diagnosis was incorrect, and that the disease was only broncho-pneumonia. The portions of lung were sent by the secretary to M. Nocard of Paris, Professor Hamilton of Aberdeen, and to Professor Greenfield of Edinburgh, with a letter stating the facts and asking for an opinion.

M. Nocard, with great discretion, courteously declined to act, as it is his rule "to refuse every consultation relating to disputed questions unless asked by both parties to the dispute."

Professor Hamilton replied fully, describing the pathological appearances and giving in a summary a somewhat ambiguous opinion. He says certain appearances "taken alone would be quite in keeping with the theory of broncho or catharrhal pneumonia" whilst certain others "would bear out the theory of the disease being of the pleuro-pneumonic type." He adds "In the absence of the naked-eye appearances of the affected organ it is very difficult for me to express a definite opinion upon the disease."

Professor Greenfield also replied giving a description of the pathological appearances; His opinion is thus expressed—"From a comparison of these changes with those I have myself observed in pleuro-pneumonia of cattle and with those recorded by competent and recognised authorities, I have no hesitation in saying that they appear to me to be identical, and that I know of no other disease which will produce them. At the same time, I do not feel justified in pronouncing a positive opinion since I have not the full facts, and there *may* be some disease which produces like changes."

Professor Williams is of course not quite satisfied with the scientists' reports and in his speech pointed out how Professor Greenfield probably forgot that the interlobular septa are not the same size in man and oxen. So far the discussion seems to have settled nothing, and probably every man holds the opinion now that he formed when the row first took place. One thing is clear—that the diagnosis of disease is more certainly made by the naked eye than by the microscope, and that pathological changes are not yet sufficiently understood to be interpreted solely by the microscope.

The question of broncho *versus* pleuro-pneumonia may be an exciting and amusing pathological problem, it must not be accepted as anything more. We cannot afford to make experiments on the stock of this country merely to settle a microscopical question. Until it is clearly established that Canada and the United States are free from pleuro-pneumonia we must decline to freely admit their cattle. Even if they have a disease so closely resembling "pleuro" that the best pathologists fail to express a positive opinion on its microscopical lesions, and the best veterinarians fail to agree as to its clinical recognition, we must err on the right side and keep such animals out till we know more about them.

The British Government possess a staff of veterinary advisers and would be acting a very foolish and dangerous part if they declined to accept its decision as to the nature of diseases affecting imported animals. Other British veterinarians may differ from them on pathological points, but the official men cannot be blamed for having the courage of their convictions, and should be supported in their action, at least until they are proved to be wrong. It is not fair to describe official firmness as "arbitrary dictation," but perhaps this is only to be taken as a humourous exaggeration, in the same way as Colonel Saunderson used "excited politician" as synonymous with "murderous ruffian."

MALLEIN.

Prof. McFadyean permits us to say that any practitioner desirous of making a trial with Mallein has only to apply to him to obtain a supply of the vaccin gratuitously. If not perfectly and always a reliable test it is certainly by far the best aid to diagnosis within our reach.

CASES AND ARTICLES.

THE VETERINARY PROFESSION v. THE INSTITUTE OF PREVENTIVE MEDICINE

The questions which have been raised in connection with the proposed contribution to the funds of the British Institute of Preventive Medicine are of more importance to the veterinary profession than might at first sight appear evident, and therefore no excuse is needed if some space be devoted to allow members of the profession the opportunity of making known their views before further steps are taken in this matter.

It may at once be conceded that the establishment of such an Institute must be far reaching in its effects, and there can be no doubt that these will be felt by practitioners very soon after its work begins, but whether for good or evil remains to be seen.

In the meantime we may take it for granted that the whole management and control of this Institute will be in the hands of the medicals, and that the veterinarians and laymen upon the Council will never be allowed to become such a power that any decision or action of the medical members could be successfully disputed. Yet it is not for us to grudge our sister profession the credit and position they have gained for themselves by their energy in this direction, and indeed it might be argued that since this Institute is to be established for the benefit of mankind therefore the medical profession ought to have the control of its affairs,

A glance at the articles of association published by the promoters, however, may throw some light upon this subject, for we find it therein stated that " . . . . . the most important . . . . objects of the Institute would be :—" To investigate the means of preventing and curing the various infective diseases of men and animals." "To provide instruction in preventive medicine to . . . . . veterinary surgeons and advanced students." " To prepare and to supply to those requiring them . . . . protective and curative materials."

Now we are agreed that it is with the intention of benefiting mankind in general that the promoters wish to establish this Institute; and we sincerely believe that medical research will in the future confer even greater benefits upon man than it has done in the past, but on the other hand it may be contended that when medical research oversteps its legitimate bounds and interferes with veterinary research to the extent of investigating, preventing, and curing diseases of animals, the establishment of an institute for such a purpose may become dangerous to the public and to the members of the veterinary profession.

This contention is based upon the records of a large portion of the veterinary research done by medical men during the present century, and we venture to think that even the medicals themselves will not care to claim much credit for their work in this direction, and their want of success is not to be wondered at when it is remembered that as veterinarians they have had no special training. We need not dip deeply into the past to find illustrations proving this statement, in fact the latest instance is of to-day viz :—A colonial government anxious to have the cause of a certain disease of one of the lower animals investigated appointed as their bacteriologist a medical graduate who is not by any means "an unknown" in the domain of medical research; yet after one short year has elapsed we find they are compelled to advertise for an assistant to him in the shape of a veterinary surgeon, who very possibly ought to have been appointed at first, and as principal instead of assistant in the investigation referred to.

Every graduate of either a medical or veterinary school will esteem and praise the works of another eminent lecturer, and no doubt will wish that for his reputation's sake he had remained a physiologist instead of becoming a bacteriological investigator whose writings upon such subjects as swine fever and cow-pox indicate that a term of pupilage with a veterinary practitioner in a cattle district might have been of considerable advantage to him in work of this nature.

When we recall the investigations of the notorious Hendon case with all its discourtesies and misrepresentations, when we find much the same thing repeated in the Fetter College outbreak at Edinburgh in 1887, to be once more repeated in the west of Scotland but a few weeks ago and in the face of protests by our most respected veterinary teachers, it is not to be wondered at if we should desire further information as to the management and working of the proposed institute before we add our widow's mite to its funds. In this connection it is instructive to remember that there already exists, though upon a smaller scale, an institution very much akin to that proposed; viz :—The Brown Institute. This is a Trust intended for the relief of injured or diseased animals, and the entire management of this Trust is in the hands of the medical faculty. In the early days of "The Brown" an experienced veterinarian was appointed, and ever on the premises as the responsible official, whereas under medical control it is not too much to say that now the original objects of this trust have been quite lost sight of to such an extent that an occasional visit from a practising veterinary surgeon is enough to meet all the requirements. Be it understood that the change was not brought about by any lack of suffering or diseased animals, but simply because the medical managers ignored and shunted the veterinary department, converting "The Brown" into an experimental laboratory for medical scientists, and for the study of preventive medicine.

Keeping these things in mind the note of warning sounded by Mr. Malcolm in his letter last week was well timed, and along with him I desire to know whether the veterinary investigations of the proposed institute are to be carried out by a veterinarian or not, and further it might be asked if the institute will deal directly with our clients, or only through the V.S. in charge of the animals or in practice in the district, and also to what extent the said V.S.

will become liable for any action or decision of the institute.

It would also be well to understand whether representatives of the Royal College of Veterinary Surgeons are to be elected by, and so become responsible to, the profession, or if they are to be appointed by the Council of the institute, and be quite independent of the opinions of the body they are supposed to represent.

It has been asserted that by joining with the medical profession in this scheme we shall improve our social and professional status, but with all due respect to those who may hold such views I think they may be mistaken. It is beyond dispute that the social status of every man is governed by his disposition, habits, education and wealth, while his professional status after a few years must largely depend upon his ability, education, and attention to the wants of his clients, and no man need expect that his position will command that respect which his personal qualifications do not merit.

It appears to be worthy the consideration of a body which aspires to take rank with other learned and scientific professions whether the time has not now arrived when they should begin to set their house in order, so that a department might be organised at head-quarters which would be available to its practitioners for advice or research in cases requiring the same. In this direction the medical faculty have set us an example, and we should deserve their respect by following it out, but it seems more than doubtful if we can ever hope for their esteem by hanging on to their coat-tails.

FIRING IRON.

PUS IN THE TURBINATED BONES.

By Capt. C. RUTHERFORD, Aldershot.

At the end of January, 1891, a troop horse of the 19th Hussars was admitted into the infirmary suffering from what appeared to be a severe sore throat; the characteristic symptoms of that trouble were well marked. On the 4th day after admission the animal could swallow food only with difficulty, much of it coming back by the nostrils, whilst the water he drank poured from the nose as quickly as he attempted to swallow it. One would expect to find something to account for the above unfavourable symptoms, but there was no heat or swelling of the larynx or pharynx, and manipulation gave no clue, there was no pus in the gutteral pouches to be detected, no post palatine or pharyngeal abscess seen or felt, and the teeth, palate, and anterior nares seemed healthy. For three weeks before death the chief symptoms were as follows:—the animal always rather depressed, the eyes listless, ears drooping, lips pendulous: there was no distress of breathing but there were severe fits of coughing and a discharge of a foul smelling pus from the nose when he coughed; food and water passed by the nose, and of course there was gradual emaciation. Not content with examining the pharynx and post palatine region by the mouth, I opened the larynx by section of the crico-thyroid ligament, but found nothing sufficient to account for the grave symptoms. The sinuses of the head were opened (excepting the frontal, which were explored with a gimlet) and found healthy, but—and this is an interesting fact—the day following the opening of the maxillary sinuses, and up to the date of death the mucous membrane, became dark red in colour, and there was a discharge of pus from them the same in character as that which came from the nostrils.

For some hours before his death on 1st March, 1891, breathing was performed entirely through the mouth.

At the post-mortem examination we found the mucous membrane of trachea, larynx, and pharynx generally of a dark red hue, and œdematous from sub-mucous infiltration of serum. On the superior face of the pharynx there was a shreddy, pale coloured, semi-detached, stinking, fibrinous membrane about three inches by two in size—it was strikingly like a diphtheritic membrane. The nasal passages were dark red in colour and their mucous membrane œdematous. All four turbinated bones were crammed full of a pale soft stinking pus, and the blood vessels on the surface of these bones stood out as cords of black, grumous blood.

The œsophagus, stomach, and bowels were healthy; liver slightly congested.

There are two interesting points worth noting:—On cutting into the frontal sinuses, which had not been trephined during the life of the animal, I found them healthy, the mucous membrane was pink in colour and there was n pus, but for some distance around the entrances made by the trephine into the maxillary and anterior maxillary sinuses of both sides of the head the mucous lining was of a dirty red colour, which was continued inwards and forwards but did not extend upwards to the frontal region. There was nothing seen on post-mortem examination of the palatine, pharyngeal, or œsophageal region to account for the extreme difficulty in swallo ing.

MALFORMATION.

By B. P. GODFRAY, Montgomery.

When attending a cow with inversion of the uterus my attention was called to a two-year-old bullock (?) which the cow-herd termed a "Will-gill." On examining the animal, which had the general appearance of a bull more especially the fore quarters, the animal being lighter behind and in shape resembling the build of an heifer, I found, about six inches below the anus, a small opening corresponding to the vulva of the cow, at the superior part of this opening was a small fleshy protuberance resembling the clitoris, the lower part of the opening being clothed with long hairs. Two inches below the anus two round bodies, which appeared to be testicles, could be felt, and in the inguinal region I noticed a rudimentary udder.

I saw the animal micturating, it stood like a bull and emitted the urine in jerks. The animal was never unwell, and was three parts fat.

DELAYED PARTURITION.

By Frank G. Ashley, Bath.

As the period of parturition is fast approaching perhaps the following case may be of interest; last February my attendance was requested to a thoroughbred mare, which I found trying to foal, and on examination found one leg in the passage, the other and the head were back. The mare was very violent and we were unable to keep her on her legs and when down she pained desperately. The fore leg was easily got up, but it took some time before I could get the head into position, as she was so violent. After the head and legs were in position and the passage well lubricated I looked for a speedy delivery as the pains were so strong, but all at once the mare's expulsive efforts failed to affect the position of the fœtus in the least. I now re-examined the position of the fœtus, fearing it had become locked against the pelvis, but found everything alright, and failed to see why her expulsive efforts did not force the fœtus forwards. Although she pained repeatedly she did not assist the delivery in the least, and the fœtus had to be drawn bodily away from her, when it was found to have been suffocated by the protracted delivery. As the mare appeared much exhausted she was propped on her sternum and a stimulent given, but in a short time she showed signs of being seriously amiss by throwing herself on her side, moaning, quickened pulse and respirations, and cold extremities. Fearing uterine hæmorrhage or rupture I made a careful examination of the uterus—without any result, and was at a loss as to what was wrong with her. She was the property of a surgeon who was present all the time and appeared as much in the dark as myself as to what was wrong with her. She continued in this condition for some hours and eventually died without having once attempted to get up, the *post-mortem* disclosed a ruptured stomach: other organs healthy.

I am of opinion the stomach was ruptured by the violent expulsive efforts of the mare about the time I got the fœtus into position, she then repeatedly forced the fœtus violently against the pelvis. Had this animal been anæsthetised in all probability her life would have been saved, but as I did not know until my arrival what I had to deal with I did not take any chloroform with me.

INSUSCEPTIBILITY TO PERITONITIS.

By Thos. A. Huband, F.R.C.V.S., Cheltenham.

I was fortunate enough to be present at the recent meeting of the Midland Counties Veterinary Medical Association when Dr. Barling read a most admirable essay upon "The treatment of Wounds." In it he gave a complete account of the most approved methods of dealing with lesions as they are presented in the human subject, many details of which are applicable to, and of the greatest possible value in, veterinary surgery. During the short but instructive discussion which followed, a very important point was referred to by several members, viz., the insusceptibility of some of the lower animals to the supervention of peritonitis after surgical operation, and several very striking and singular instances in proof of the fact were adduced. With your kind permission I will attempt a record of two such cases which are to the point in corroboration of the experiences as stated by several gentlemen on that occasion.

A valuable 3 year old thoroughbred colt, by Victor out of Flora Macdonald, belonging to Mr. Humphreys, the well-known auctioneer of this town, was castrated by me in the common, old fashoned way (cauterization) after preparation in the usual way, and a careful examination of the parts, and using the hobbles for casting him. The struggles were not unusally violent, the operation was quickly over, the animal got up, shook himself and walked into the stable, seemingly all right. Shortly afterwards, upon going to have a look at him I was surprised to observe a pink coloured mass protruding from the opening on the near side of the scrotum, and was only too well aware that an escape of a considerable part of small intestine had taken place. We at once put him on his back again, throwing with the hobbles, and using the double side-lines as before, applied cold water as continuously as possible to the protruding bowel, but the mass had become of an alarming size and colour before he was properly secured; upon manipulation which of course caused increased struggling, the opening through which the gut had escaped was found to be very small. I had succeeded in working back about six inches of the bowel, which was now excessively congested, when another struggle sent it out again and much more besides, and the situation began to appear rather alarming.

Having got the animal nicely under chloroform I made another attempt to reduce it, but the dark coloured mass could not be returned, nor even a small portion of it; so taking a long probe-pointed bistoury and directing it downwards to the internal abdominal ring with the index finger of my left hand, carefully avoiding any injury to the bowel, I enlarged the opening by about half an inch and after carefully washing succeeded in returning the mass in about four minutes afterwards. I then passed two steel skewers across the opening as close to the abdominal wall as I could, and secured them by suture and ligature. The animal was sometime "coming round," having been anæsthetized for about thirty minutes, but walked away very well. I shortly afterwards saw the owner and prepared him for the worst, saying that peritonitis must assuredly ensure, but fortunately no alarming symptoms appeared. The patient was given no solid food for a few days, and the swelling of the parts was considerable. On the ninth day after I removed the skewers, the external wounds quickly healed, and he subsequently went on as well as possible, and has since, I am told, won a steeplechase.

The other case was that of a mule belonging to Col. Agg of The Hewletts, which had galloped against the sharp end of a large pole, which pierced the abdominal wall and allowed the escape of a considerable portion of omentum. As it was some

hours after the accident and the case looked very ugly, I advised that the mule should be destroyed, saying that peritonitis would most probably supervene. however, carefully the hernia was reduced and the case treated. They would not hear of destruction unless absolutely necessary, so after ligaturing the vessels; I excised the omentum within about two inches of the opening. returned the other portion, sutured the wound, adjusted two drainage tubes and fixed it up with a body bandage. For some days there was considerable discharge, but the mule did well, was never off his feed, the wound healed, and he eventually got all right.

I think such cases should teach us that peritonitis in our subjects is not to be anticipated with the same certainty as in mankind either after operation or accident. I can call to mind some cases of accidental rupture of some part of the abdominal walls which have been pronounced hopeless by me, but which might have been treated with as fortunate a result as the two now recorded.

TRANSLATIONS.

RETENTION OF DEAD FŒTUS.

By M. Jacotin, Chief V.S. 20th Artillery, (France). Trans. by Thos. J. Watt Dollar, M.R.C.V.S.

History—Indications of gestation.—The 3rd February, 1888, a bay mare named "Obole," 5 years old, of the Anglo-Norman breed, useful for light draught work, came to the corps with a detachment of 15 others from the remount depôt of Caen. Like several others she showed signs of being pregnant and after a time there were manifest movements of the fœtus. We considered on examination that she must have been at the 7th or 8th month of gestation when she was sent to the corps, and would probably foal about May or June. The other mares, like "Obole," were put in boxes and were the subjects of special care. They all foaled without trouble except her. The months of May, June, July and August passed, and the condition of the mare "Obole" was in no way changed, except so far as the udder was concerned, this had in a certain measure developed and then returned to its normal size. At last being tired of waiting, the animal was sent to do the ordinary light draught work of the troop horses, and this she continued to perform until her death on the 29th September, 1891. During this time she had no special periods of rest except for passing affections, such as wounds, skin disorders, over fatigue, swelling of the hind limbs, slight pulmonary emphysema with bronchitis, these latter being possibly attributable to the persistent state of gestation. We ought to say that the mare was always in very "middling" condition. Nevertheless, she always worked well, although often under particularly painful and fatiguing circumstances. The 29th September, 1891, shortly after the great manœuvres in which she took part, Obole, whose appetite and vigour had failed for several days, entered the infirmary with very alarming symptoms of colic and died same day.

Autopsy.—The animal died on the right side. The belly was considerably distended and remarkably hard, especially the posterior portion of it. On opening the abdominal cavity a small quantity of sero-sanguinous liquid ran out, and an enormous tumour, occupying the larger part of the abdomen, was seen. This was the uterus, which contained an apparently fully-developed fœtus in the right cornu.

The body and walls of this organ were very thick, indurated, especially about the os, the substance of which was much hypertrophied and transformed into fibro-lardaceous tissue, grating under the bistoury and leaving but a very narrow opening in the centre, hardly large enough to pass a goose quill. The left cornu was also thickened and hard, although less so than at the os. The right horn, on the contrary, was much dilated and thinned out by the presence of the fœtus. The chorion was much thickened and of a brownish colour; its external face was detached with the greatest ease from the uterine mucous membrane; between these two membranes, a small quantity of dark brown, very soft matter, deposited in little isolated patches was noticed. The internal face of the chorial sac, which offered numerous large folds, was confounded with the external layer of the allantoid from which it was impossible to distinguish it, so intimate were the two membranes. The allantoid sac contained no liquid, but a large number of dark brown, flattened, elastic bodies, thin at their edges, oval or rounded, were observed in its interior; these had the same appearance, consistence and colour as those habitually encountered in the allantoic fluid, or sometimes adherent to the external wall of the sac by a pedicle, and known by the term *Hippomanes*. The large diameter of some of these bodies was from 10 to 15 centimetres.

This allantoic cavity, the walls of which were of a dark chestnut colour, contained besides a quantity of caseous matter, having the appearance and consistence of chocolate paste. The amnios was of nearly normal thickness. The external surface, covered by the internal layer of the allantoid was easily separated. The amniotic fluid was dark in colour, very abundant and rather thick. The umbilical cord was slightly thickened and dark in colour, in consequence of its maceration.

The fœtus, weighing 79 pounds, presented anteriorly, in a sterno-pubian position, with its fore limbs doubled backwards from the knees, the head and neck being altogether abnormally placed. This latter was turned round from right to left, completely surrounding the left fore limb behind the knee, in such a way that the head, the right face of which was brought into contact with the internal surface of the right fore-arm, formed a prominence by its anterior extremity, between the two knees. In consequence of its long maceration in the amniotic fluid the fœtus was devoid of hair on many parts of the body and that which remained, as well as the epidermis, was removed with the greatest ease. The muscular tissue had a "washed-out" colour and was easily broken down, the intestines

contained a brownish, viscous matter (meconium); a sickly odour was given off from all the organs of the mother and fœtus; there was no trace of putrefaction.

Intestinal lesions which caused the mare's death. The peritoneum was the seat of generalised inflammation; it varied in colour from light to dark red, its thickness was increased according to the regions. Fibrinous bands of a reddish white or bright red colour were seen on the abdominal surface of the diaphragm. on the floor of the abdomen, on the surface of the stomach and spleen, The stomach contained some alimentary fluids, greenish-yellow in colour. The mucous membrane of the small intestines, of the cæcum and large colon was of a lead grey colour, tinged with red. The large intestines were filled with dry and packed alimentary matter. A little behind the diaphragmatic flexure, on the internal face of the second portion of the large colon, at a point where this is immediately attached to the third, an irregularly circular plate, about ·20 centimetres in diameter, was seen, this was lead grey in colour with greenish and blackish shadings, and gave off a strong gangrenous odour; at this point the three intestinal tunics were softened and very easily torn. Towards the centre of this plate there was an irregular opening of about 4 centimetres in diameter, which communicated with the 2nd and 3rd portions of the large intestines; the external surface of the large intestines corresponding to these lesions was the seat of a sero-sanguinous oozing, the probable cause of the fatal peritonitis The alimentary matters in the large colon, were transformed into a dark grey pulp from which a very marked gangrenous odour escaped.

The other digestive organs showed no special alterations. The lungs were healthy, the right side of the heart contained thick black clots and the left heart small fibrinous clots. All the other organs appeared normal,

Roell says that this prolonged retention of the fœtus may take place (even in the mare) but he gives no other indications. Huzard senr., Huzard junr., Delwart, Morel de Vindé, Figuier, have reported analgous cases in the cow and ewe, but no author that we have been able to consult gives any particulars of a similar nature respecting the mare. I therefore come to the conclusion that such instances are exceedingly rare.—*Recueil de Médecine Vétérinaire*, 15 *Fevrier* 1893,

EARTH WORMS AND TUBERCULOSIS.

By M. M. Lortet and Despeignes.

Trans. by Thos. J. Watt Dollar, M.R.C.V.S.

Earth worms can preserve the bacilli of tuberculosis for several months, in different regions of their organisation, and thus bring the microbes infiltrated in their tissues to the surface of the ground. The authors have proved by the inoculation of the fæcal matters that the lumbricoides deposit on the soil, that these worms may bring the tuberculous bacilli from the depths of the earth where they have been deposited. Very deep flower pots have been filled with finely screened peat mould. Tuberculous matter has been placed at the bottom of these pots, the lower part of which stood in plates filled with water. Over the surface of the peat mould a layer of one or two centimetres of very pure white silicous sand was distributed. The pots were covered with leaves of paper. In the course of a few days the worms came up and deposited their excrements on the sandy layer. where it was possible to collect them, avoiding all foreign contamination. These excrementitial matters when inoculated to cavies gave rise to generalised tuberculosis.

One has therefore the right to affirm that the lumbricoides may bring to the surface of the soil, with the products of their digestion, bacteria which have preserved all their virulent properties intact.—*Comptes Rendus de l'Académie de Science.*

VETERINARY SOCIETIES.

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

A meeting of this Society was held in the London Hotel, 4 St. Andrew Square, Edinburgh, on Wednesday afternoon, 15th February, 1893. The retiring President, Mr. James Clarke, Coupar Angus, occupied the chair. There were present Principal Williams, Professor W. O. Williams, Professor Hunter, Messrs. Rutherford, Burnett, Thomson, Aberdeen; A. Pottie, Paisley; Connochie, Ayton; Borthwick, Kirkliston; McArthur, Perth; Young, Dundee; Hutton, Kelso; Bannatyne, Haddington; Bradley, Edinburgh; Moir, Edinburgh; Young, Editor *North British Agriculturist*; Storie, East Linton; and several visitors.

The Hon. Secretary read the minutes of last meeting, which were approved.

The Chairman said the next business is the installation of Professor Owen Williams as President. I am quite sure you will all agree with me in saying we have made a very excellent and happy choice. Professor Owen Williams has proved himself a very energetic and excellent member of this Association, and from his well-known abilities as a teacher and veterinary surgeon I am quite sure he will fill the chair with great acceptance to the Association. (Hear, hear.) I am very glad to see that since my installation two years ago the Association has increased in numbers very materially, numbering now about 50. Well, this I ascribe more particularly to two causes—first to the enthusiasm and energy of our very excellent Secretary—(hear, hear)—and secondly partly to the fact that a departure was taken after my election as President two years ago in changing the place of meeting, or at all events in having one meeting during the year in the North. That has been a great success. We had a very excellent attendance, in fact, I think, a better attendance than here generally, and I hope the Association will agree to continue this course. The Association is evidently to be benefitted by it. Well, gentlemen, before vacating the chair I have to thank you very much for the cordiality and kind support you have given me during these two years, and I hope you will accord the very same to Professor Williams. There is one thing very necessary for the progress of an Association such as this—not only enthusiasm by the office bearers but enthusiasm shown by the members, and I sincerely hope that in the future, as it has been in the

past, the Secretary and President won't call meetings here without getting very hearty support from the members. (Applause.)

Professor W. Owen Williams then took the chair. He said: Before the conclusion of this part of the business I wish to nominate Mr. O. C. Bradley as a member of this Association, and Mr. Moir seconded the motion which was adopted.

The Late Mr. A. Robinson.

Mr. Rutherford, Edinburgh, said there is a duty which devolves upon us—and I think it very properly falls upon me—to notice the very sad death of a much respected member of our Association since we last met. I allude to Mr. Archibald Robinson, one who has been a member of this Society for many years, not only of this but of other societies in Scotland and elsewhere, and one who by his good qualities and great talents taught us the benefit of professional brotherhood. I have to ask you to ask our secretary to write and state to his widow and his grieving father and mother how much we deplore his loss to ourselves and to the profession of which he was such a brilliant ornament.

The Chairman:—It was with deep regret that I heard of the death of our great friend Mr. Archibald Robinson, one of the rising men of the profession and in fact if he had been granted life and good health he would have been among the leaders of the profession in his day. I second the motion of Mr. Rutherford that we should send a vote of condolence to show our deep sympathy to his father and other relatives.

Principal Williams said as an old teacher of our departed friend I have also to express my sorrow at his premature decease. He certainly was one of my most brilliant students, and, as already stated, if he had lived would have been a great honour to his profession. He was a most accomplished man, well acquainted with the Continental languages and with Continental literature, and had he lived would have been a great benefit to the profession. His old father and myself have been friends for many years and I cannot tell you how deeply we sympathise with them at the very premature, but not unexpected death of our friend.

The motion was agreed to.

The Secretary next read letters of apology from Messrs. Cowie, Balhousie; Hutchinson, Dundee; and others.

The Secretary said in compliance with the request made at last meeting of this Association regarding a petition being presented to the Highland and Agricultural Society I wrote to the secretary on December 4th of last year in the following terms:—

December 4th, 1892.

To F. N. Menzies, Esq., Secretary,

Highland and Agricultural Society of Scotland.

Sir,

According to a resolution of the Scottish Metropolitan Veterinary Medical Association, at a meeting held in Edinburgh on 23rd November last, I now take the liberty of laying before your directors the following resolution, which was passed at that meeting.

"That owing to the diversity of opinion as to the nature of the disease found in a Canadian bullock, slaughtered at Lindores, County Fife, in October last, and which has led to the scheduling of Canadian cattle, the Highland and Agricultural Society be requested in the interests of agriculture to institute further investigation into the matter, it being understood that Principal Williams still has in his possession a portion of the disputed diseased lung, and that he is quite willing to submit the same to any well-known pathologists."

I may state that Professor Nocard, Veterinary College, Alfort, near Paris, Professor Greenfield, Edinburgh University, and Professor Hamilton, Aberdeen University, might be collectively or individually consulted on this matter, and I understand Principal Williams is quite agreeable to this arrangement.

(Signed) Peter Moir.

Mr. Menzies replied:—

3 George IV. Bridge,
Edinburgh,
7th December, 1892.

My Dear Sir,

Your letter of 4th with resolution of the Scottish Metropolitan Veterinary Medical Association as to the disease amongst cattle from Canada laid before my directors to-day, and after deliberation they resolved not to interfere in the matter.

Yours faithfully,
F. N. Menzies, Secretary.

Peter Moir, Esq.,
9, Kilmaurs Terrace, Edinburgh.

The Secretary continued: I wrote to these eminent pathologists asking if they would be so good as to make a microscopical examination of a section of the Lindores lung as follows:—

Edinburgh, 10th December, 1892.

The Scottish Metropolitan Veterinary Medical Society.

Dear Sir,

The above Society at their meeting held on November 23rd ultimo, desired me to present a petition (copy of which is subjoined) to the Highland and Agricultural Society of Scotland requesting them to forward specimens of lung disease found in a Canadian bullock slaughtered at Lindores, Fifeshire, in October last, for your opinion, there being a dispute between the veterinary advisers of the Government and Professor Williams of this city.

That Society, after due deliberation, has decided not to interfere in the matter, and I now take the liberty of appealing to you direct, and will feel much obliged, by your letting me know if you will kindly consent to make a microscopic examination of a portion of the lung now in Professor Williams' possession, and give your opinion thereon.—I am, yours truly,

Peter Moir, Hon. Sec.

My first reply was from Professor Nocard.

Mon Cher Confrere,

C'est toujours une chose délicate que d'intervenir dans une discussion entre deux confrères; à moins d'y être invité par les deux parties, l'opinion que l'on émet n'a qu'un résultat; irriter la partie que l'on condamne, sans pour cela close le débat.

Mon vieux maître si regretté, Henri Bouley, m'a souvent donné ce conseil de refuser toute consultation relative à une question litigieuse, à moins que cette consultation soit demandée par l'autorité compétente ou par les *deux* parties en désaccord.

C'est la conduite que j'ai toujours tenue, autant que je l'ai pu, et il ne me semble pas que je doive aujourd hui m'en départir.

Veuillez agréer, mon cher Confrere, l'assurance de mes sentiments les plus distingués.

Ed. V. Nocard.

When translated reads:—

My Dear Confreere,

It is always a delicate matter to interfere in a discussion between two confreres, unless one is invited by both parties the opinion which one gives has but one result, namely, to irritate the party condemned, without at the same time closing the dispute. My old master so much regretted (H. Bouley) often gave me this advice to refuse every consultation relating to a disputed question

unless this consultation is asked by a competent authority or by both parties to the dispute.

This is the line of conduct I have always taken as far as I have been able, and it seems to me that I ought not to depart from it on the present occasion.

Professors HAMILTON, Aberdeen University, and GREENFIELD, Edinburgh University, most kindly acquiesced to my request.

Professor HAMILTON made a very careful examination of which the following is a report :--

University of Aberdeen,
February, 4th, 1893.

DEAR SIR,

I have now had the piece of lung you sent me, said to be from an American ox, examined, and beg to report as follows :—

The piece of lung in question was preserved in spirit and was about an inch long by half-an-inch wide and thick. It was in a fit state for microscopic examination, and I divided it into two parts. One of these was embedded in celloid previous to being cut into microscopic sections, the other was cut into sections without being embedded. The lung substance felt less spongy than usual but did not feel as if it was hepatized.

On staining and mounting the sections and examining them with a magnifying power of fifty diameters the most striking feature noticed was the large quantity of cellular material lying in the air-vesicles. Nearly every air-vesicle contained a mass of cells with highly stained nuclei. The infiltration was general; it did not appear to be distributed in patches. On higher amplification the cells just mentioned as being contained within the air-vesicles were seen to be of large size. Compared with a coloured blood-corpuscle they were as a rule three or four times as large. They were evidently of epithelial origin, as they could be seen desquamating from the neighbouring alveolar walls. They corresponded exactly with what are usually termed "catarrhal cells."

The cells in question lay embedded in granular matter (mucus). In no instance could I detect a fibrinous network within the air-vesicles and around them.

On comparing them with the cells within the air-vesicles in several cases of genuine infectious pleuro-pneumonia of cattle, they presented an entirely different appearance. They were much larger, possessed more distinctly defined nuclei, and varied much more in general contour.

There was not any well defined bronchus in the piece of tissue sent me, but a small bronchiole which I found seemed to be in a like catarrhal condition.

The interlobular septa were more prominent than they usually are. They could be readily seen with the naked eye, owing to the thickening of their substance. The thickening was caused by the presence within them of a dense network of fibrin, with a few small round cells in its meshes. The appearance of these septa was identical with what is found in infectious pleuro-pneumonia.

The blood vessels seemed to be fairly filled with blood, but not so distended as they usually are in pleuro-pneumonia.

The piece of lung did not possess any pleura attached to it.

Summary. The appearances of the air-vesicles taken alone would be quite in keeping with the theory of broncho or catarrhal pneumonia, with this exception, that the catarrhal appearances were more diffuse than is usual in that disease. It is quite unusual, however, to find the interlobular septa infiltrated with fibrin in catarrhal pneumonia. In this respect the sections of the lung would bear out the theory of the disease being of the pleuro-pneumonic type. It is also to be borne in mind that in the commencement of a croupous pneumonia of any type—infectious or not—the epithelium is often found desquamating. I must confess, however, that I have seldom found it proliferating or desquamating to the extent presented by this lung in any croupous pneumonia I have examined.

In the absence of the naked-eye appearances of the affected organ it is very difficult for me to express a definite opinion upon the disease. The piece of lung sent to me is certainly anomalous in many respects.—

Yours very truly,
D. J. HAMILTON.

PETER MOIR, ESQ.

I have seen Professor Greenfield to-day and he expressed his willingness to continue his examination. He says :—

Report on a piece of lung from a cow (Fife case) supposed to have suffered from pleuro-pneumonia contagiosa.

The piece of lung submitted to me for examination measured only about three-quarters of an inch in length, and half-an-inch in breadth and thickness. It had apparently been hardened in spirit; and I have no information of its appearance when fresh, or of the condition of the rest of the lungs.

I have examined it carefully by various methods, with the following result.

I. The notable changes are almost entirely limited to the interlobular septa.

They consist in great thickening, due in part to fibrinous exudation, partly to leucocyte infiltration, and to great distension of the lymphatics. Here and there are seen parts which are composed of a denser laminated connective tissue, with swollen fibres; but this change is not prominent. Other minuter inflammatory changes need not be described.

In the air-cells in immediate contiguity with the septa, are masses of recent fibrinous exudation, well seen by Weigert's method of fibrin staining.

II. In the rest of the lung tissue, the changes are comparatively slight. Some of the minuter bronchi shew slight catarrhal change, but still more some peri-bronchial leucocyte infiltration, such as is seen in all capillary bronchitis. But this change was very slight, and was accompanied only by slight fibrinous exudation in the immediately adjacent alveoli, and almost no catarrhal change. From a comparison of these changes with those I have myself observed in pleuro-pneumonia of cattle and with those recorded by competent and recognised authorities, I have no hesitation in saying that they appear to me to be identical, and that I know of no other disease which will produce them. At the same time, I do not feel justified in pronouncing a positive opinion, since I have not the full facts, and there *may* be some disease which produces like changes.

W. S. GREENFIELD, M.D.

Feb. 13th, 1893.

Principal WILLIAMS :—I have also a report which I will read. In addition to those of the gentlemen mentioned I sent two pieces of the lung to Canada—one from the Lindores case, and the other from a case of pleuro-pneumonia which I had in my possession.

Professor SMITH, Principal of the University of Toronto, says :—

Toronto, January 5th, 1893.

MY DEAR SIR,

I enclose copy of Dr. John Caven's report on the specimens of Canadian lung, and also of contagious pleuro that you kindly sent me.

Dr. Caven made a most careful examination. The specimen of Canadian lung shows unmistakable signs of broncho-pneumonia.

I again most emphatically assert that contagious pleuro does not now exist nor never has existed in any

of the cattle of Canada.—I am, my dear sir, yours truly,

ANDREW SMITH.

Prof. W. WILLIAMS, F.R.C.V.S.,
New Veterinary College, Edinburgh, Scotland.

[COPY.]

University of Toronto,
Pathological Laboratory, Jan. 4th, 1893.

A. Smith, Esq., F.R.C.V.S.

DEAR SIR,

I have examined microscopically the specimens of lung tissue which you sent and have to report as follows :—

The specimen labelled pleuro-pneumonia shows a distinct *croupous* inflammation, the alveeli being largely filled with a fibrinous exudate. The vascular engorgement is throughout the greater part of the specimen a very marked feature, and there is almost no proliferation or desquamation of epithelium to be seen. The specimen labelled broncho-pneumonia, on the other hand, presents the characteristic features of a *catarrhal* inflammation, the bronchi and alveoli containing numerous epithelial elements with a few leucocytes. There is no fibrinous exudate or at most a few isolated alveoli showing it, as is common in catarrhal pneumonia.

Judging from the microscopic appearances I would conclude that the two specimens were taken from animals suffering from pneumonia which had resulted from very different causes, the one corresponding to what in human practice is called lobar or croupous pneumonia and which is recognised as an acute specific form, whereas the other corresponds to the catarrhal or broncho-pneumonia of human pathologists, and may result from a variety of causes.—Yours very truly,

JOHN CAVEN,
Professor of Pathology, University of Toronto,
and in the Ontario Veterinary College.

Professor A. SMITH,
Ontario Veterinary College, Toronto.

Principal WILLIAMS continued : "Croupous" or specific pneumonia is now understood amongst all medical men to be of a contagious nature, and the condition of the lung which you find in the pleuro-pneumonia of cattle is almost identical with what you find in this specific pneumonia of man. I may state that these reports are so far very satisfactory, and I am sorry that Professor Hamilton is ambiguous. He gives you a description of broncho-pneumonia and he gives you a drawing of it. However, the graphic description will stand for ever, no matter what the disease may be. There it is and I maintain, notwithstanding what Prof. Greenfield may say, that broncho-pneumonia is a disease of a non-contagious character. They forget that in horned cattle the interlobular septa are very much thicker than in the human being, or even in horses. The interlobular tissue is more marked and distinct than in other animals. Well, again, Prof. Greenfield—I have seen him this morning and had a talk with him and certainly he has made up his mind that this is pleuro-pneumonia. I showed him what I thought to be the cells, the large catarrhal cells drawn by Prof. Hamilton, who seems to rather be inclined to change his mind. I could not convince Prof. Greenfield that the smaller contents of the alveoli were not fibrine. Prof. Nocard—and some of the gentlemen who assisted me will confirm what I say—at once agreed with me that this is broncho-pneumonia. And he is the only man we can look to. He is a man who investigated the disease for the French Government. They did not shilly-shally. They did not allow them to burn their boats as the people of this country have done. Now, if this be pleuro-pneumonia we must exclude American cattle ; if it be not pleuro-pneumonia the trade must be opened. Is this a free trade country where arbitrary measures can be carried out at the dictum of one man? In France they went in for the whole subject. Inoculation was tried, and Nocard came to the conclusion that is was a non-contagious disease, and he agreed with me. Whereas here you see they bring forward that it is a contagious disease. There is a glorious piece of evidence given to yesterday's deputation by Mr. Gardner, that one healthy Scotch animal had been in contact with a condemned, diseased Canadian bullock and had become affected. Nobody saw the lungs of the animal. At least I did not. But granted it had pleuro-pneumonia—it was only a single one. They say some are still alive and there has not been another case. Then I ask you this question, was the time intervening between the discovery of the disease, or even the landing of the Canadian cattle and the outbreak of pleuro in this particular animal sufficiently long? Did any veterinary surgeon know pleuro break out in two or three days after contact. I say distinctly, No! It takes a far longer period. If it had been pleuro we should have had a great deal more of it about Scotland. Although some of the cattle are about to-day we only hear about this particular animal, a case which I doubt very much. If this was pleuro why did not they show the lung? I have my opinion and I show the lung. Here is a fact which they have all omitted to mention. There is a plugging up of the blood vessels in pleuro-pneumonia which you never have in this broncho-pneumonia. And even with the naked eye if you compare the open vessels in the one disease with the plugged-up vessels in the other I say no man will make a mistake. I don't think Prof. Greenfield will alter his opinion. At the same time I am perfectly willing to let Prof. Nocard or any pathologist in the world determine between us. I maintain my opinion as strongly as ever, and I think the evidence that has been brought forward since our last meeting is much stronger in my favour than then. I think it a great shame indeed that a source of profit to our poor farmers during this period of distress should be cut off at the arbitrary dictation of a gentleman certainly who has not allowed investigation into the matter.

Mr. RUTHERFORD said he was sure the society was very much indebted to the secretary for the trouble he had taken in entering into correspondence with the various gentlemen as he had. He could not say himself that they were advanced any further since last meeting in the direction of having made the question more satisfactorily clear. On the contrary to his mind they were deeper in doubt and mystification as between experts as to what this disease really was. He was intensely disappointed with those gentlemen who differed so materially between themselves. Now as ordinary members of the profession they themselves were not trained—he said it advisedly—to be capable of passing absolutely reliable opinions upon microscopical appearances and tissues, but having a certain amount of training in what was termed the "naked eye" appearances of disease they were drawn back again to the desire to be allowed an opportunity, in the event of the disease again appearing to see for themselves the "naked eye" appearances of these lungs—not portions of the lungs but of the whole of them, and not of one lung but of both lungs from each infected animal. He himself had not once but 50, aye 100 times, seen in cases of pleuro portions of lesions not much larger than a walnut, and the whole of the rest of the lungs absolutely healthy. If this disease was pleuro—and he must confess that the history of those outbreaks was directly opposed to the history of pleuro as he had always been accustomed to meet it—it was quite unusual to find the disease breaking out after a short voyage like that to which these animals were subjected, and no trace left behind as to the origin of it in Canada. If these animals had contagious pleuro the home of the disease must be in Canada provided it was nowhere else. Now Canadians

had very cleverly explained away that. They said that admitting there was no disease in Canada it was quite possible infected cattle might have crossed the Canadian boundary into Canada, and hence the presence of this pleuro amongst their importations. That might or might not be, but there was one certain way of proving its presence should it ever be brought again. It would surely be a very easy matter for those who had recognised this disease now to recognise it again, and he thought the County was entitled to ask that the animals should not be immediately slaughtered and their lungs dispersed until a larger number of experienced veterinary surgeons had seen the animals in life, and a similar number seen them in death, so as to make a careful examination of the lungs as taken from the body. Two great tests in doubtful cases were first the inoculation of some of the virus from the lungs of the slaughtered animals into the cellular tissues, and again an opportunity of promoting contact between living diseased and living healthy animals.

Mr. CONNOCHIE, Selkirk; said it seemed very remarkable that the ordinary practitioner seemed to be ignored altogether. In his 35 years' experience he had had comparatively little difficulty in diagnosing cases of pleuro and in recognising the appearances by the naked eye.

Mr. CLARK said the very fact alone of 1200 or 1300 cattle having been brought from Canada to this country and only four doubtful cases—Mr. Gardner said "undoubted" cases but they were doubted by a very great authority, Prof. Williams—was an argument against its being pleuro. He thought the Government had a right to take the public into their confidence and at all events give ample opportunity of further investigation. That they had not been ready to do. His impression was that the Government must give way and grant a reintroduction to Canadian cattle. Speaking personally he had examined about a twelfth part of the 1200 called in question, and a healthier lot of lungs he never saw in his life. His impression was that Prof. Williams had a very strong argument at his back through the fact that only four cases were supposed to exist. In the event of any further trouble he thought a committee should be appointed and a full investigation take place not by the microscope but by experts, veterinary surgeons who were well-known to have a thorough knowledge of the disease. The Government had not done what they were entitled to do, and the clinical aspect of the question should have been thrashed out.

Mr. MOIR said he fully coincided with the remarks regarding the treatment this country had received in the opportunities afforded to veterinary surgeons to test for themselves the precise nature of this disease. The microscopic reports brought forward to-day afforded a striking example of the adage that "doctors differ," and he maintained that the weight of evidence was very strongly against the opinion of those doctors being correct. The Canadian Government had made inquiries throughout the Dominion as to the existence of this disease, and they reported there was no such disease in the country; while they had received to-day the opinion of Prof. Smith of Toronto, the pioneer of veterinary science in Canada, who for the past 30 years has taught and practised veterinary science in the Dominion, and who emphatically asserts that contagious pleuro-pneumonia does not now exist or ever has existed in Canada. He is supported by Dr. Cavens, in respect to the portion of the Lindores lung supplied by Prof. Williams, and microscopically examined by him, being that of broncho and not pleuro-pneumonia. He maintained that an interest such as this—some 98,000 Canadian cattle being imported into Scotland last year—that an enormous traffic like this should at the dictation of one or two men be completely stopped was monstrous. He quite agreed with Mr. Rutherford that inoculation should be put in force if Canadian cattle were to be admitted again, if disease of a doubtful character appeared among them.

Mr. YOUNG, Dundee, said the underhand manner in which the Government had gone about this affair was remarkable. Mr. Clark had to thank his official position for seeing these 100 cattle. He (Mr. Young) took a little interest in the thing. He went to the scene of the outbreak and an inspector met him and turned him off the place. He was only a young man in the profession and surely such a powerful man as Prof. Brown might have let him see them. It seemed to him that so long as the Government did not freely allow not only veterinary surgeons but the general public to see into it, so long would doubt exist in the public mind.

Principal WILLIAMS:—Just a word of explanation. Let me correct one mistake you are all making. The similarity between these diseases is so great that it is only the microscope that will determine it. Even in France, Nocard himself until he had made investigation was unable to state that there was any difference between it and pleuro. There is one great difference. In pleuro the blood vessels are plugged; in this disease the blood vessels are not plugged. You will have coagulation of the blood previous to death. In this disease no coagulation takes place and that is the most distinct separation between the two appearances to the naked eye at least. You must have a microscope and you see even with the microscope people differ. One man says it is lymph and the other coagulated cells. So far as experiments in inoculation have gone Nocard has proved the disease is not contagious. If we see what he has done let us act upon it, or agree to what he has done. I simply say it is broncho-pneumonia. I have had no experience of its contagiousness. I am not in a position to say it is not contagious. It is a great pity it has been called cornstalk disease. We have it here in cattle after parturition; what is called septic (?) pneumonia. It is not of course so frequent here, but you can understand in a climate like Canada where the winters are so terribly cold, with these animals put on board ship and confined, you can understand how they will suffer so much more from broncho-pneumonia.

Mr. BURNETT, Maybole; said he was told this morning by a gentleman coming from Glasgow, that his brother had bought some of the cattle. He was written to about them but never replied. Some of these cattle were still alive and healthy. A neighbour of his had some of these cattle also and they had been examined every fortnight.

Principal WILLIAMS:—Off the same ship?

Mr. BURNET:—Yes.

Principal WILLIAMS:—That is a most important piece of evidence.

Mr. RUTHERFORD:—I thought they were all killed.

Mr. BURNET:—Some are still alive yet. When I made my motion at last meeting that this should be referred to the Highland and Agricultural Society I intended also that the Society should take this matter up and investigate it further, than by the microscope, or by other means find out who is wrong. Of course it cannot be done in the past but for the future they ought to make some investigation.

Mr. THOMSON, Aberdeen; a Government inspector; said, the subject had been so well ventilated, so well spoken to from one aspect of the question that anything he could say of a depreciatory character might be looked upon as coming from a partisan of the Government. He was not there to exonerate the Government as to whether it was contagious or sporadic, but he had a great deal to do with pleuro in a large county in which it was very prevalent. He had not been so fortunate as his friend, (Mr. Connochie) who had been capable on all occasions of discovering pleuro in the living state and

always certain in the dead state. He must say he had very often had great difficulty as well as much anxiety to find out whether there was any special way whereby he could arrive at a decision in this problem. He must say he had been in many cases puzzled with the appearances, and he was glad to find Prof. Williams coincided with him in saying it was very difficult indeed to discriminate. He had been accustomed to Canadian cattle for many years and would say that it would have been more a happy hit than otherwise if one could have discriminated between pleuro-contagiosa and pleuro-simplex without microscopic examination. He was sorry there had been imported into this discussion so much embitterment, because he held it was altogether a scientific subject, and if the Government had made a mistake they had done it from no bad intention, but from want of being capable of differentiating between the one thing and the other. The feeling of the meeting seemed to be so adverse and so critical in regard to the Government's action in this matter that further discussion would still more embitter a question which had better be left alone.

Principal WILLIAMS:—Have we been treated as scientific men by Prof. Brown and the others?

Mr. THOMSON:—You have forced them to fight. They have never come forward in a public way and said: "We have been wrong." You have pressed your claims into that bitter sort of condition which I think is altogether unworthy of any association to countenance.

Principal WILLIAMS:—Nonsense.

The CHAIRMAN in closing the discussion pointed out that they had received the opinions of extremely eminent men. Prof. Nocard and another gentleman in Canada, a recognised veterinary surgeon, said the disease was not contagious pleuro. Dr. Hamilton who had a smattering of knowledge of veterinary science "swithered." Dr. Greenfield who had no knowledge of veterinary science gave it his opinion that it was pleuro. It was stated by Mr. Rutherford that it was quite possible for pleuro-contagiosa to affect one portion of the lung and and the rest of the lung to be healthy. Even if that were so they certainly had not cut off the top of the lung and sent it on to experts. There was another thing. The virus of pleuro was not the only virus that caused the typical swelling in the tissues of cattle. There were other germs which caused similar swelling, more particularly the germ *bacillus ademnitis*, of the disease commonly called Blain, supposed by many to be due to the sting of the bee or the bite of the viper. Another thing which he might remark was in connection with taking purely medical opinion about diseases of the lower animals. There was a very great difference between tuberculosis in cattle and tuberculosis in man. Men not veterinary surgeons were probably not aware of the fact, or did not trouble to learn the fact, that there were two or three forms of pleuro in cattle—that which was contagious, that which was due to cold, and that which was due to injuries.

The CHAIRMAN said they had their next meeting in about four months. Their next meeting would be in some town other than Edinburgh.

Mr. CLARK proposed that they should again visit Perth, because several members had joined from the simple fact that the association came north to meet them halfway. On some future occasion they might with advantage go to Melrose, Kelso, Selkirk, or Hawick. There was this advantage in connection with Perthshire. They had Vets. as thick as flies in a treacle pot. Within a radius of 15 miles they had 35 professional men living by veterinary science alone.

A voice: There are plenty who don't live. They exist only. (Loud laughter.)

Mr. HUTTON seconded the motion which was adopted.

The CHAIRMAN then delivered his inaugural address:

PRESIDENTIAL ADDRESS.

By Professor W. O. WILLIAMS.

GENTLEMEN,

I beg to thank you most sincerely for the great honor you have done me in electing me your President for the ensuing year. It is a special honour you have done me when one reads the roll of my illustrious predecessors. I do not feel worthy of being added to that roll but you may depend upon it, that whatever lies in my power to keep and add to the high reputation of this society, it shall be done. Fortunately for me the days of the long inaugural addresses are dying out, and on this special occasion as we have done so much important work you will quite understand why my address is so brief. I wish however to touch upon a few topics of considerable importance to our profession.

Firstly, what is known as a New Educational Scheme which has virtually commenced with the year. It is good theoretically, but I am much afraid will cause considerable hardships to stock-owners in districts considerably removed from large towns. The reason I think so is, that from a commercial point of view no man who has paid a large sum of money and spent several years in obtaining his diploma, can possibly afford to travel a long distance to see a sick animal for a very small fee; as it always must be remembered that owners of animals carefully consider, as nearly as they can, the probable cost of veterinary treatment, and consequently in many cases prefer to doctor the animal themselves or else to slaughter, as without a doubt the initial cost in their minds will be less than the ultimate expense. This refers more particularly to cattle, sheep and pigs. As we all know, it is seldom that a veterinary surgeon is called upon to treat an odd sheep or pig, the owner being fully aware that it would cost more, even in these days, for professional attendance than the animal would ever be worth. It seems to me that in these days of great agricultural depression Government might assist the agriculturists. It is a very hard case indeed that a small stock-owner should see his stock slowly dwindling away from some or other disease and yet be not able to afford to pay for professional advice. Why should not Government assist those people who are struggling to earn an honest livelihood by appointing a district veterinary surgeon, who on intimation, we may say, from the police, should go and attend the diseased animal? It is a curious fact that people may obtain medical advice and treatmant for themselves—may also obtain legal advice—may educate their children—may be kept and fed, and all of these for nothing. Why should they not be able, if in need, to obtain veterinary advice? but at the present rate of expensive education their chances are becoming more and more remote. It thus seems to me to be quite certain that, unless Government aid be given to assist in the treatment of the lower animals, in many of these outside districts such advice and attendance will be given by emphirics, and the days will gradually return, when the farrier was the veterinary surgeon and the barber the doctor. One thing which always surprises me is, that we don't have a code of veterinary ethics. This code should be broad in its lines. It might contain certain rules for the guidance of young practitioners, also regulations, all to be recognised by the Royal College of Veterinary Surgeons, and infringement of which rules might be punishable: such as the following might meet with approval:—

I. In consultations the consultant should express his opinion and advice only to the veterinary surgeon who called him in, and should do all in his power to smooth the way out of a difficulty if there be one.

II. There should be a recognized minimum fee charged by the veterinary surgeon.

It does not seem very professional for veterinary surgeons to compete between themselves for work. If need be let them compete by proving their fitness to be entrusted and not to compete as regards prices.

III. Another thing which might be considered unprofessional, should be canvassing. This is a most objectionable practice, and harms the profession very much in the eyes of the public.

IV. Lastly, I think that no veterinary surgeon should be permitted to advertise in the press. It does look bad to see Mr. —— ——, is a specialist on castration; or a wonder with dogs; or that Mr. —— ——'s, colic draughts cure all diseases.

Before concluding the business of the meeting, the secretary read a circular letter received from the secretary of the National Veterinary Association, referring to the Institute of Preventive Medicine. The letter was allowed to lie on the table, for future discussion.

At the close of the meeting, the members of the society and their friends dined together, under the presidency of Prof. W. O. Williams, and a very pleasant evening was spent.

PETER MOIR, *Hon. Sec.*

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

ANNUAL MEETING.

The annual meeting of the members was held at the Grand Hotel, Colmore Row, Birmingham, on Tuesday afternoon, February 14th. Mr. F. W. Barling, President, occupied the chair, and there were also present Dr. Barling, Dr. Motteram, Messrs. W. Hunting, London; H. Blunt, Lutterworth; Huband, Cheltenham: Freer, Uppingham; Wiggins, Market Harborough; Crowhurst, Leamington; Smith, Tunstall, Malcolm, Blakeway, Parker, Stanley, Birmingham; Collett, Dawes, West Bromwich; Trevor Spencer, Bromyard; Horton, Warwick; Beddard, Wolverhampton; Proctor, Lilehull; Gooch, Stamford; King, Newport Pagnell, Pemberton, Bridgenorth; Merrick, Northampton; Trigger, Newcastle; Green, Alfreton; Coe, Stoke-on-Trent; Olver, Tamworth; and Gould, Redditch. Visitors: Messrs. Mulvey, Byner, Lamb, Marriott, Clunes.

The PRESIDENT explained that his brother, Mr. Gilbert Barling, who was to read them a paper, had an important professional engagement during the afternoon, and he asked that the agenda should be altered so that his paper might be taken before the annual business was transacted.

Mr. TRIGGER moved that the paper should be taken after the minutes had been read.

This was seconded and carried.

Mr. J. MALCOLM said he should like to say a word or two about the day of meeting. It had been the custom for all their annual meetings to be held on a Friday, in fact most of the Birmingham meetings had been held on Friday, but they seemed to have gone away from that. It was first proposed that the meetings should be held alternately on Tuesdays and Fridays, and then it was proposed that they should hold two meetings in Birmingham, and that the first should be on a Tuesday in August, and consequently it followed that they were there then on a Tuesday. He was sure it would meet with the wishes of the majority that they should hold their annual meeting on a Friday. If it was necessary to move any resolution he would give notice of it: "That they hold the February and May meetings on Fridays, and the August and November meetings on Tuesdays." That would enable members who could not come on Fridays to be present at the Tuesday meetings.

The SECRETARY (Mr. Dawes) read the minutes of the last meeting and also the following apologies for non-attendance: Sir Henry Simpson, Professors McFadyean, Walley, Williams, Penberthy, Pritchard, Messrs. T. J. Merrick, W. Carless, Stanley Carless, Greaves, Paley, Prickett, Perrins and others.

The following were nominated as new members: Mr. W. Coupe, Wednesbury, by Mr. Dawes; and Mr. S. Webster Martin, Chesterfield, by Mr. J. Blakeway.

The following gentlemen were elected members: Mr. C. Hayward, Millstone Lane, Leicester, proposed by Mr. Blunt, seconded by Mr. Barling; Mr. W. Eaton, Twyford, Leicester, proposed by Mr. Blunt and seconded by Mr. Smith; Mr. Trevor Spencer, Bromyard, proposed by Mr. Merrick and seconded by Mr. Dawes; Mr. W. Blunsom, Cirencester, proposed by Mr. Dawes and seconded by Mr. Barling.

THE PRINCIPLES OF WOUND TREATMENT.

By GILBERT BARLING, M.B. B.S., F.R.C.S.

Surgeon to the Birmingham General Hospital, Professor of Pathology in the School of Medicine.

Mr. President and Gentlemen,—When I was first invited to read a paper before this meeting, greatly flattered though I was by the invitation, I had serious misgivings as to attempting it, the more so when I learnt the names of those, eminent in your own profession, who had previously undertaken the task. I felt however that from my relationship with members of the veterinary profession I could rely upon your bearing patiently with me this afternoon if my observations should lack somewhat in interest. I have endeavoured to avoid wearying you by choosing for my paper a subject which is of paramount interest to us both, viz. the principles of wound treatment.

Former meetings of this Society have had the advantage of having papers by Professor McFadyean and Walley on "Suppuration" and "The Putrefactive processes in Wounds" so the modern theories which direct the treatment of wounds have been laid before you by men who are authorities on such matters. To a great extent then the ground has been cleared for me and I shall deal briefly with the theoretical part of my subject, but I cannot ignore it altogether, and for this reason—what a man really *believes* that he will *practice*. Let me give you an example, in the treatment of cancer in the human subject. Permanent cure by operation is attained in a certain proportion of cases, this cure depending upon two factors; the one is early operation, the other is the freest possible removal of the tumor, so that as wide a margin of healthy tissue as may be shall be removed with the tumor, thus securing that what the public calls its roots shall be taken away. What influence has theory on this question of the curability of cancer? A very important one, in this way. The surgeon who believes in the *local* origin of the disease has every incentive to operate early and thoroughly, with the expectation, in a certain number of cases, that he will permanently cure his patients. On the other hand, the surgeon who believes the cancer tumor to be the local manifestation of a *constitutional disease* feels very little hope of permanent relief from operation—he does it as a palliative, he is in no hurry to extirpate the disease, and he is not careful to go as wide of it as the circumstances permit. The result is that the word "cure" to him is unknown, and he regards those who speak of cures with suspicion. Happily most surgeons are now firm believers in the *local* origin of the disease, and the result is marked improvement in the results obtained by operation. I have introduced this digression, on theory influencing practice, because I wished to emphasise this fact by an illustration altogether apart from the question of wounds

and I do this because I notice that when one gets on to the subject of the germ theory of wound diseases feeling is apt to wax warm and to obscure the judgenent, as between those who believe in the potency of germs for producing evil, and those who do not.

I have endeavoured to show why I think it important, in the case of a disease such as cancer, we should hold to sound theory as to its causation as far as our lights go, because it leads to more successful treatment. This is equally true of the treatment of wounds. If a man is thoroughly imbued with the belief that the cause of wounds doing badly is generally the presence of micro-organisms in those wounds, he is bound by every consideration which should weigh with him to do all that lies in his power to exclude such harmful things. I am pleading for something more than the half-hearted faith which existed in the early days of what is commonly called antiseptic surgery, when we were groping our way towards the truth as we now know it. In those days the application of the principles of antiseptic surgery was often made by men who had a very faint conception of the truths on which they were acting, and as a consequeuce the spray and other details first suggested by Lister were almost looked upon as fetish, and the proceedings were made almost as ridiculous as those indulged in by the medicine man of a tribe in central Africa. From this condition of benightedness we have advanced until we have reached a stage of too great refinement—if possible, and operative proceedings are almost smothered in the multitude of minute details which precede and accompany them.

Accepting then the truth of the germ theory of wound disease let us see clearly what is meant by it, let us take care that we do not make our treatment too cumbersome to be readily applied in daily life, and, above all, let us hold fast to those old, but well laid down principles of wound treatment which existed before the germ theory was thought of, viz., dry wounds, careful apposition of the tissues, drainage, absence of tension, elevation of the part etc. These things are as important now as ever they were but they are a little apt to be forgotten.

Let me first define what I believe to be the truth about the germ theory of disease. It is, that various micro-organisms find their way into wounds and there, *under certain circumstances*, are capable of producing according to their kind, suppuration, tetanus, gangrene, or other disease. The source of these bodies which infect wounds is various; the hands of the surgeon, his instruments, ligatures, sutures, sponges, dressings, and the skin of the patient, abounding as it does with gland orifices in which micro-organisms grow. Then we have the air, or rather the particles of dust which may be floating in it, possibly water, and then any accidental contamination to which a wound may be exposed, for instance, by contact with the ground. Some of these sources of germs are more potent for evil than others. Perhaps the atmosphere and ordinary water have been too much vilified as containing a quantity of germ life. The danger from these two sources has I believe been greatly exaggerated. From the other sources I have mentioned the danger is real enough. You will notice I said just now that germs are capable of producing harm *under certain circumstances*. It is not true that germs, finding their way into wounds, suppuration or some other bad results *must* follow. This will depend upon several circumstances and notably upon two. These are, the amount of germ life which finds its way into the wound, and the resistance, or in other words the good health of the tissues.

Taking these two points in order and dealing first with the number of germs finding their way into a wound, Mr. Watson Cheyne, in his book on suppuration and septic diseases, has shown conclusively that the effect produced by introducing various germs into the tissues depends directly on the dose, that is on the number introduced. If but a few are injected, there may be no result at all, the germs dying out, apparently being destroyed by the resistance of the tissues which surround them. If the dose be increased in amount, a local inflammation may be produced without general infection of the body. If however the dose be large, then we have both a local and a general result; for instance in the case of the micro cocci which produce suppuration we have an abscess at the seat of inoculation and general blood poisoning or pyæmia. With regard to the resistance of the tissues, or what we may for our purpose term the general health, it seems hardly necessary to argue the matter out. The fact is acknowledged, and was so long before the germ theory was promulgated, that well doing after operations was promoted by avoiding operations when the subject was out of health, and by doing all that was possible to promote the general health before resorting to operative procedures.

It appears therefore that we have two important points here for our consideration in the treatment of wounds. Operations not urgent for immediate performance should be delayed if a man or animal is out of health and an attempt be made to promote general improvement. The other point is that we should do all we can to prevent the access of germs to wounds, consoling ourselves that even if we are not able to exclude them altogether, yet by limiting them to the smallest number possible we are greatly promoting the rapid and safe healing of wounds.

This brings me to the more practical part of my paper. How are we to exclude germs from wounds? This I can best answer by describing the precautions I take in my operations at the General Hospital, leaving you to apply them as far as the circumstances under which you work will allow. The whole matter consists in taking pains, in cleanliness carried to an extreme degree. In patients admitted for operation for disease and not for injury we can go leisurely to work to attain the first step; it is the complete disinfection of the skin in the operation, and to which I personally attribute the most importance. In the sebaceous and sweat glands and in the hair follicles we have so many traps for the retention of numerous micro-organisms some of which, though not all, are pathogenic and capable of growing and setting up wound disease if once they are admitted. To get rid of these, if the part be hairy as the scalp, it is completely shaved, then washed with soft soap to get rid of the fatty particles which so often protect the germs from destruction, then with ether. After this cleaning, the part is wrapped up in lint soaked in solution of Perchloride of Mercury, 1 in 3000, kept moist by gutta-percha tissue over it, and this dressing is applied for at least 24 hours before the operation is undertaken. In such operations as trephining for abscess or cerebral tumor, or in the radical cure of hernia, this preliminary cleaning of the skin has much to do with the successful result of the operation, which depends so absolutely upon the absence of suppuration. In operations undertaken for injury circumstances deny the opportunity of cleaning the surface so thoroughly, but here the shaving and scrubbing with soft soap etc., are as carefully applied as possible.

The next point to receive attention is the hands of the surgeon and of those helping him. Extreme cleanliness is again the order of the day. Plentiful scrubbing with soap and water and soaking in the same solution of Perchloride of Mercury, and during the course of the operation a plentiful supply of the same lotion should be at the side of the surgeon, tempting him to wash off blood or discharge at frequent intervals.

All instruments should as far as possible be sterilised by boiling, there is no other perfect way. For those which cannot be boiled, soaking in 1 in 40 carbolic acid is the best expedient, the use of Perchloride solution

being impossible from the staining it inflicts on metallic surfaces. Sponges I only use for operations within the abdomen, and this only because I have not been able to find any good substitute for them in this cavity. If I could I would abolish sponges from my wards and operating theatre altogether. They are frequent sources of wound infection, unless they are destroyed after once being used, a rather expensive proceding. As a substitute for sponges I have small masses of absorbent cotton wool rolled up into wads and wrapped up in a single layer of gauze. These are kept in a solution of Perchloride of Mercury until they are wanted and are then wrung out dry when they are required. Once they have been used they are thrown away, the cost being very small. With regard to the operator's clothing, I wear a linen overall which covers me from my neck to my feet and after each time of using the wrapper is sent to the wash.

Some other details call for careful attention. They are the selection and preparation of ligatures, sutures, and drainage tubes. As a general rule I use silk-worm gut for sutures, because they are easy to fasten quickly, easy to remove and have little tendency to cut out quickly, this last point depending on the fact that suppuration around them is generally absent, because they contain no meshes into which micro-organisms can creep and then set up irritation in the skin. If there is great tension when the edges of the wound are brought together I use coarse silver wire, because it holds longer than any other suture before cutting its way out, and I also use the same material for suturing bone, as in the case of fractured patella or olecranon. If very fine sutures are required, as in suturing the uvula in cleft palate, I use horse hair. All of these are prepared by soaking in carbolic lotion, and are kept when not in use, either dry or in solution of perchloride in alcohol. Ligatures, twenty years ago, were either silk or hemp. Then came the period of catgut, the great desire being a ligature which should be readily absorbed after its application ; and, following catgut, other animal ligatures readily absorbable and having some other feature—as a flat instead of a round surface to apply to the vessels ; such were kangaroo tendon, ox aorta, twisted peritoneum. For a long time catgut held the field, although it was found that the earlier ligatures were absorbed too soon and they were made somewhat more resitant by hardening in chromic or sulphuric acid. At the present time, however, I have given up the use of catgut for several reasons. First of all it cannot be used safely in the peritoneal cavity from the rapidity with which the ordinary gut is absorbed ; second, if hardened in chromic acid it is so hard that absorption is unduly delayed and the ligatures are apt to find their way to the surface some time later. A greater objection than these is the difficulty there is in making catgut quite aseptic. In its preparation the process of putrefaction has to be gone through, and it is very difficult to be sure that all the germ life in the catgut is afterwards completely destroyed. These defects of catgut have led to its being supplanted to a great extent by silk for ligatures, on the ground that the latter can be made aseptic without doubt, and if asepticity is attained the ligatures remain buried in the tissues until they are absorbed. The silk ligatures are made aseptic by boiling for at least half an hour to destroy any germ life, and then the boiled silk is kept in solution of carbolic acid, one in twenty. I use this material not only for tying vessels but also for ligaturing the neck of hernial sacs, tying off masses of omentum, and similar purposes. The fate of the silk is eventually the same as that of catgut, it is absorbed although much more slowly than ordinary cat-gut, silk talking almost as many mouths as gut does days to be absorbed.

For drainage I use either some material like silk in strands to act as a capillary drain, or else tubes of india rubber or of glass. Each has its proper place. The glass has the advantage of being easily kept aseptic, and now that these tubes can be obtained of any size they will often take the place of the rubber tube. There is one place where the glass tube is indispensable, that is in the abdomen. It is of course not required in all cases of abdominal section, but when drainage is required a glass tube is placed with one end in the cavity to be drained, the other projecting at the wound, so that it may be frequently emptied by means of a syringe with a bit of rubber tube attached. In most abdominal sections when a tube is used it is placed so that its lower end dips to the bottom of the pelvis, as all fluids free in the peritoneal cavity tend to gravitate there. You will observe from what I say later, however, that I am not addicted to the use of the drainage tube wherever it can be dispensed with. The objection to drainage tubes is this, not that the tube itself irritates the tissues, but it may be the carrier of germ life into the deeper part of the wound through some accidental contamination, and further, when the tube is in position it becomes filled with blood and lymph in which germs can grow with greater readiness than they can if lying in contact with the living tissues of the wound. In fact the blood, etc., in the tube acts as a culture medium for the germs which healthy living tissues may destroy.

I turn now to those materials which are applied as lotions to the wounded surfaces before the wound is closed, or in the form of dressing afterwards. These materials, called antiseptics, are legion, and each has its apostle who preaches the merits of his particular fancy in season and out of season. These antiseptics have been made too much of, at one time they overshadowed the whole question of wound treatment. Hence it is that whilst the truth of the Germ theory of wound diseases becomes more and more firmly established every day, the materials used as antiseptics are often the sport of fashion, first one being lauded and then another. The great point to aim at is to be selective in the material we use and not to expect it to do for us what we should attain by other means. In other words, if the precautions I have described in some detail be fully attended to, we shall practically exclude germs from our wounds, and there is no need for the use of antiseptic solutions, many of them irritants in themselves, to the wounded tissues. As to the dressing to be applied after the wound has been sutured, I think the virtues of the various antiseptics has been unduly lauded. When a wound is sutured and closed up the die is cast, I believe, for good or for harm in the majority of cases. Either the wound is tainted with materials which will give rise to mischief or it is not. For this reason it is not material what the antiseptic dressing is, always provided that it complies with two or three points. It should not irritate the skin, it should not be capable of absorption and of poisoning, it should be suspended in a material which is elastic and absorbent.

Of the numerous antiseptics in use I prefer for the purpose of cleaning the skin of the patient, the operator's hands, etc., a solution of perchloride of mercury, generally one in four thousand. The less this is applied to the wounded tissues the better, not so much because it is poisonous, for none of my cases have suffered any harm in this way, but because it irritates the tissues and causes serous oozing into the wound afterwards, which is undesirable. This is especially the case when a large wound surface is in question, as in an amputation of the thigh or breast. In the operations on the peritoneal cavity its use is altogether contraindicated. Of those materials which may be applied to the wound as a dressing I have only to reiterate what I said just now, they must be elastic and absorbent, and of course clean in the surgical sense of the term. The model of what a dressing should be is, in my opinion, the material suggested by the late Mr. Sampson Gamgee and known as

his tissue. Where the question of expense comes in this can be replaced by a cheaper material, as for instance wood wool in sheets. My own cases are almost always dressed in the same way. Next to the skin several layers of iodoform gauze are applied with a good sprinkling of free iodoform, and over this either Gamgee tissue, wood wool, or simply absorbent wool. I have such good results with this that I shall be very unwilling to change, but I must repeat here what I said just now, that I believe the virtues of particular antiseptics applied to wounds has been unduly lauded. It matters little what is used so long as it is not actually soiled with germ life; the all important details are those before and during the operation. A very useful and non-poisonous material which can be used freely to wounds is boracic acid. It is possessed of but feeble antiseptic powers but it can be introduced into wounds in large quantities without irritating or poisoning. It is especially of use where large bone cavities have been cleared of sequestra and there is great doubt as to the part being made aseptic by irrigation, etc. The cavity should be filled with dry boracic acid before the wound is sutured, and the acid, slowly dissolving in the inflammatory exudation, is of much benefit in preventing septic changes in these wounds which are notoriously liable to troubles of this kind. Boracic acid may also be usefully applied freely dusted on wounds before the dressing is put on.

Perchloride of mercury and carbolic acid applied to wounds are too apt to irritate the skin, and for this reason I prefer iodoform. Even the bicyanide of zinc and mercury, suggested by Sir Joseph Lister, is not free from the disadvantage of irritating the skin when applied directly to it. Those of you who know anything of the early days of antiseptic wound treatment, as first taught by Lister, will perhaps wonder why I have not drawn attention to the advantages of the carbolic spray. In those early days to which I have referred it was generally believed that the atmosphere was considerably laden with germ life, and that admission of air to the wounded tissues exposed them to constant infection from the suspended germs. To prevent infection from this source, and to destroy the germ life which was precipated into the wound, recourse was had to a fine spray of carbolic acid playing on the wound and around it. Since, however, it has been shewn that the air is the least constant source of wound contamination in ordinarily healthy atmospheres, the assumed necessity of any such device as the spray no longer holds good, and it is abolished from the practice of modern surgeons, and this with the direct sanction of Lister who introduced it, and to whose utterances on wound treatment the utmost weight attaches. What a relief it is to do without this spray only those who have had a long apprenticeship under it can understand.

I hope I have not wearied you in describing with so much detail numerous small points; my excuse is that careful attention to these constitutes to a great extent successful surgery. Yet I am not forgetful of those old principles of wound treatment which were taught and held with tenacity before the germ theory was thought of. These principles are just as important now as formerly, and whilst germs must be regarded as the absolute cause of suppuration and other wound diseases, yet there are several other important factors, want of rest, the collection of blood and serum in the wound cavity, too much tension etc., which predispose and determine the ill doing of wounds.

I hitherto dwelt upon the precautions to be taken with the object of excluding germ life from wounds. These may not be absolutely successful, and there may be some contamination of the wounded tissues through imperfect asepsis. If this be so what are we to do to prevent the growth of germs and the evil results which follows? It may be suggested that we should use some powerful antiseptic to wash the wounded surfaces and so to destroy the germs. The objection to this I have already pointed out, it causes such free serous oozing into the wound cavity, and it gives no security that the germ will be destroyed by the momentary exposure to which they are subjected by the antiseptic agent. What steps then are we to take in order to prevent the few germs in the wound from multiplying and doing harm. The first thing to attend to is the complete stoppage of hæmorrhage. It would seem almost unnecessary to refer to such an elementary principle in wound treatment, but I am speaking, not so much of the closure of those larger sources of bleeding to which of course every one attends, as to the stoppage of the oozing which takes place from vessels which hardly call for the application of ligatures, but yet are capable of allowing a considerable collection of blood to take place in the wound cavity after the incision is closed. It is therefore to the attainment of a "dry wound" that we must direct our attention. This is secured in various ways some of which are available if not all, in every kind of case. After the larger vessels have been secured, sponge pressure maintained for a few minutes may be all that is necessary; if not douching with water as hot as it can be borne with the hands is valuable. I have given my reasons for sparing use of strong antiseptic lotions such as perchloride of mercury, which have some styptic effects, and I have just as much dislike to those applications which are known as styptics, as for instance the Tr. Benzoin. If after the use of sponge pressure and hot water oozing still exists, then the application of firm and even pressure is of the utmost importance after the wound has been closed. This is of course obtained by careful bandaging over suitable dressings. In situations such as the axilla or neck where equable pressure by the dressing cannot be provided, then an exit for blood and serous oozing must be provided by judicious drainage. I have pointed out why I think the use of drainage tubes is generally undesirable, they provide a site in which germs, if present, can grow without being in contact with living tissues which act as their destroyers, and further, up the drainage tube germ life may grow from the surface and infect the deeper parts. But in some cases we have to choose the lesser of two evils, and if we are not confident of the asepticity of our wounds it is better to give exit to the blood etc. from the wound by using drainage than to shut the incision up closely, leaving the germs to devolope in a nidus of blood and serum which is so well suited to their needs. When drainage is used it should be so placed as to secure the evacuation of the most dependent part of the wound so that there shall be no accumulation in pockets, and the drain should be removed at the first dressing or as soon after as possible.

There is one region of the body in which this question of dry wounds is of paramount importance, it is in the abdominal cavity. Here from the beginning of the operation to the end, the surgeon's attention must be constantly directed to the stopping of all bleeding at once. When the incision in the abdominal wall has been made, and before the peritoneum has been opened, the bleeding vessels should be clamped with Well's forceps, and when the cavity has been opened the same precaution should be observed. Once blood has escaped into the cavity and finds its way amongst the coils of intestine it is most difficult by sponging or washing to thoroughly remove it; and its presence in the cavity, if it is left, forms one of the great dangers of abdominal surgery. It is not the mere presence of blood which does harm, but rather that it acts as the nidus in which the growth of germs can take place luxuriantly.

In operations which involve the opening of the air passages the absolute prevention of blood from entering the trachea is equally great. Blood finding its way into the alveoli of the lungs is constantly the starting point

of pneumonia, especially of that septic type which is so extremely fatal. This is one of the great dangers of operations involving the tongue or mouth cavity. So much is this the case that where the bleeding is difficult to control, as in operations for the removal of tumors from the larynx, or sometimes for the removal of the whole tongue, a preliminary tracheotomy is done, and the trachea plugged with a tube around which a tampon of sponge is secured to completely plug the trachea, the passage of blood into the parts below being thus absolutely prevented. Another important detail to be attended to is that the wound cavity shall be reduced to the smallest possible size by the use of sutures. This includes not only the use of sutures to the external incision, but also the use of deep sutures where they can be applied. For instance, in amputations of the limbs I cut the muscles of the flaps longer than is absolutely necessary to obtain closure of the surface incision, and so long as to enable me to stitch the divided muscles over the bone end, the sutures being buried in the tissues and left to be absorbed. By this means the cavity of the wound is practically abolished and everything lies snugly in apposition.

After the wound has been closed and the dressing applied other important needs are attended to. Absolute rest is secured by the application of retentive apparatus, such as splints where this is possible, by slings or by recumbency; or if the part is an organ of special sense, as for instance the eye, its function is abolished for the time by excluding its stimulant light. Just a word as to the value of splinting in procuring rest in awkward parts of the body, as in the neck where the direct pressure of a splint to the wound area is not feasible. I often find the greatest possible advantage after extensive operations on the neck for tubercular glands, in the application of a splint to the opposite side of the neck and head, the splint being made of material such as gutta-percha, which can be moulded to the part. The neck is for the time made a rigid column instead of the constantly mobile structure which it commonly is.

As great as the need for rest is that of suitable position for the wounded part. The great principle to be observed is the promotion of the return of the lymph and blood stream by the position the part is placed in. The old adage "water won't run up hill" applies to wounded parts with unusual emphasis. The blood is an inflamed area tends to linger in the over distended vessels, and everything possible should be done to place the wound on a higher level than the tissues with which it is continuous. Who is there who has had experience of a Whitlow and does not remember the intense throbbing in the finger and hand produced by lowering the hand out of a sling which was supporting it. At each pulsation of the heart the inflamed area seems to be bursting with blood. The same result is produced by the dependent position of any inflamed part.

Then we must not forget how important it is not to impede venous and lymphatic return by applying tight bandages or strapping to the part which lies above the wound, and the vessels of which carry off the blood and exudation of the wound area. Firm and even compression of the site of the wound should be the rule, but the less there is above the wound the better. Most surgeons can call to mind examples of the harm done by the application of too tight a bandage or of a strip of strapping which has obstructed the free return of blood and lymph from a wound. The part becomes œdematous, the nutrition of the tissues is interfered with, and if any septic particles are present in the wound they find the circumstances favourable for them to work evil.

This again leads me to another point of importance, the absence of tension. Great tension in a wound is of itself sufficient to cause fever—sometimes to a considerable extent, but this is not its only drawback. Consider for a moment what the mechanical effect of tension is. It compresses the vessels in the inflamed area, vessels in which the circulation is already embarrassed, in which the current is slowed, and in which stasis and thrombosis may occur. If in addition to these difficulties the vessels are compressed by the tension of the tissues outside them, the nutrition of the wounded and inflamed parts is still further lowered, and every opportunity is afforded for the growth of micro-organisms which, despite our precautions, may have found their way into wounds. These evil doers lying in healthy tissues the nutrition of which is well maintained, tend to die out, but where tension exists and nutrition is interfered with then the resistance of the tissues is too low, and germ life thrives. Tension in wounds is due generally to oozing of blood or serum into the wound cavity, and for its relief exit must be given to these accumulations, either by liberating some of the sutures or by the introduction of drainage tubes if this seems called for. It may be necessary when the parts around the wound are tense from inflammatory infiltration to make incisions to give relief from the interstitial pressure. Bearing upon this question of tension is the absence of all obstruction to lymphatic and venous return, to which I have already alluded at some length.

To sum up what I have placed before you; I would say that modern wound treatment is based upon the recognition of the germ theory of disease. All our efforts are directed to making wound *aseptic in the first instance* by those minute attentions to cleanliness which I have described at length. Every thing which comes in contact with the wound, such as instruments, ligatures, sponges, etc. must be so prepared that they cannot introduce infective particles; the skin around the wound must not be allowed from want of cleanliness to be the source of infection; the air of a reasonably healthy building does not do the harm with which it was at one time credited. If the conditions I have laid down are complied with wounds are made aseptic, and *the less they are exposed to the use of so-called antiseptic lotions the better.* If however a wound, for instance a compound fracture, has been exposed for sometime before it comes under treatment, then the use of antiseptics is called for to destroy and neutralise as completely as possible any accidental contamination to which the wound may have been exposed from the clothing, the earth, or the weapon which produced the injury. Germ life not having been altogether excluded from wounds I have endeavoured to show how its development may be prevented by attention to the general principles of wound treatment, rest, absence of tension, dryness of the wound cavity etc. which by many surgeons in the early days of the germ theory, appear to have been lost sight of for a time.

What do we hope to gain by all this labor—for it involves no small amount of work? We hope to practically abolish suppuration and septic diseases, erysipelas, tetanus, and acute infective spreading gangrene. We hope to reach a condition when surgeons will undertake operations with the power to assure their patients that they are safe from what the public calls blood-poisoning in all its forms. Other advantages also follow. Wounds in which suppuration is excluded are as a rule painless in healing, and the time during which the patient is incapacitated is reduced to a minimum; two very important facts. Further, apart from the risk which suppuration involves to the patient's life it mars the complete success of some operations, such as the radical cure of Hernia. We have therefore every incentive to do all that lies in our power to attain perfect asepsis which alone can give us the safest, most rapid, and painless healing.

It may be gentlemen that the circumstances under which you work render the application of the details possible in human surgery quite impossible in your treatment. Nevertheless the same fundamental principles are at the bottom of successful wound treatment, whether in

man or brute. We have some advantages in the ability to control our patients more than you possibly can yours, but you have as a set off, healthier subjects to deal with, free from the effects of alcohol and unwise living, and with greater reparative powers. Whether our practice and yours can be made to coincide or not, I have no doubt it is to the advantage of both professions to interchange ideas upon common topics such as I have introduced to your notice. The wise man said "as iron sharpeneth iron so sharpeneth every man his fellow." In this spirit I have ventured to trespass upon your attention to-day and, recollecting the flood of light which has been thrown upon diseases incidental to man—tubercle, tetanus, and now upon cancer—by the study of animal Pathology, I look hopefully forward to future advantage which we shall both gain by comparing own ideas and experiences.

The PRESIDENT said he should feel obliged if anyone who took an interest in the paper would put what questions he wished as soon as possible, because his brother had to leave in about twenty minutes. He was sure they all felt deeply indebted for the paper (hear hear) which had been an instructive one, and which he hoped would be of service to the profession.

Mr. MALCOLM expressed his indebtedness to Mr. Barling for giving them such an admirable paper. They had had some very able papers at their meetings, but he did not think they ever had one that came more thoroughly home to them, and was of more practical importance to them as veterinarians. (Hear, hear). He felt sure that he was doing right when he wrote to their President to ask him to try and induce his brother to come and speak before them, and he was extremely pleased that Mr. Barling acceded to the request. (Hear, hear.) He had laid very forcibly before them the absolute necessity of great cleanliness in wounds, in fact his paper seemed to be largely summed up in that. Mr. Barling had supplemented what was taught by Professor Mc Fadyean and Professor Walley, that the bad results of wounds were largely attributable to germs. Mr. Barling had complemented that, and taught them how to get rid of the germs, aye better than how to get rid of them, how to prevent them. A large part of Mr. Barling's treatment was preventive; he disinfected the skin of his patients and he disinfected the instruments in a way that he (Mr. Malcolm) thought they could scarcely adopt, but the further they could adopt it the better would their case be. (Hear, hear.) Abdominal surgery in human beings and in the lower animals differed very greatly. It was most necessary to be careful in abdominal surgery when it affected human beings, but in animals many operators used indifferent methods. He mentioned the impunity with which some members of the profession carried on the spaying of bitches, and said that by proper attention to antiseptic treatment they were able to a large extent to avoid such diseases as erysipelas, tetanus, gangrene; and every one knew how important it was to prevent these diseases. He was glad that Mr. Barling had laid so much stress on the methods adopted by the late Mr. Gamgee. He had heard Mr. Gamgee speak of wound treatment before them, and he impressed them with the wonderful success of his methods. No one could read his book on wound treatment without being very much benefited. The late Mr. Gamgee used to be an honorary associate of their profession; he was also connected with the veterinary profession he believed even more directly than Mr. Barling, still Mr. Barling had a considerable connection with the veterinary profession, and he was sure it would be a considerable addition to the society if they could get him enrolled as an honorary associate. They had a good list already and if they could add the name of Mr. Barling to it they would do a good day's work, independently of having heard an admirable paper. (Applause.)

Mr. PARKER said he should like to second the proposition as to the election of Mr. Barling as an associate. Apropos of the paper on the treatment of wounds he pointed out that veterinary surgeons were not so favourably situated with regard to the wounds of their patients. He should like to ask Mr. Barling what he considered the best thing to be done when a bandage could not be applied. He simply put carbolic oil on the wound. The great thing was to keep the wound as dry and as quiet as possible. Boracic acid had been mentioned but he never saw it used but once. It had then been used upon a surgeon's horse. He (Mr. Parker) blistered the animal's leg and it was well directly. The surgeon said "I thought you were going to kill my horse, but I know the sense of your treatment now."

Mr. TRIGGER endorsed all that had fallen from Mr. Malcolm as to the value of the paper which would rank with the high standard papers that they had had on previous occasions. He regretted that that was not a more representative meeting. The change in the day of meeting he believed accounted for the comparatively small attendance. (Hear, hear). He was sure many of the members who were unable to attend would be the first to regret their inability when they heard of the admirable paper they had had—admirable because there was nothing in it that one could fail to understand. It appealed to the common sense of every practitioner who kept himself in touch with the present day, because everyone knew the simple treatment of wound was the aseptic treatment. They were obliged to recognise it in cases where they were not able to carry out the scientific theories of the present day, and they were staggered to find the good results. Mr. Barling had laid great stress on the closing of wounds. He (Mr. Trigger) also attached great importance to it after the wounds had been properly cleansed. He could tell them, however, of cases of large gaping wounds which had been caused in collieries, and to which attention had not been called until the hope of closing them had passed. One might take control of the wound, and think it was no use closing it, and they treated it and the wound healed, and they got as small a scar and as perfect a cure as where wounds had been sutured. He could call to mind many cases of large flesh wounds and the only trace left of them was where the stitches had been. He instanced a case of tetanus brought about in a mare through a nail having been picked up. The wound was treated in the ordinary way and the mare made a complete recovery from the wound in the foot apparently. After she had been at work two days he saw her by accident, and the moment the stable door was opened he saw that she was suffering from tetanus. To get up the foot that had been treated was impossible. He sent for a couple of blacksmiths but they could not get the foot up. He decided not to act hastily and destroy the mare. The next day she was worse, and if not put in the slings she would have been down. She was accordingly put in the slings but the wound on the foot was not touched. It was as bad a case of tetanus as he ever saw and it made a complete recovery. The wound never had any application after the tetanus set in, and to use the owners expression, which he doubted, "the mare was a better mare now than before." Veterinary surgeons could not help envying the medical profession for the large field which they had for surgery, and also for the better position in which they stood towards their patients. A surgeon was able to put his patient on his back and not only do that but to keep him there for as long as he wished. That would be a great advantage to the veterinary surgeon to be able to do. He looked upon slinging in the early stages of disease as being of great advantage. Another thing that had struck him in his practice was that there was no place where a wound to an animal did so well as in a colliery. If he got a bad case of a wound to a horse in a pit he never had the animal brought to the

surface. He had found wounds which would have been thought hopeless anywhere else recover in the coal-pit. The reason, in his opinion, was the equable temperature. Everyone must endorse what Mr. Barling had said about sponges. He also agreed with Mr. Barling as to the necessity for disinfecting all instruments. With regard to boracic acid he did not agree with Mr. Parker. It was a valuable adjunct. Iodoform with boracic acid was one of the best dressings they could have. Carbolic acid he did not like at all.

Mr. SMITH was very much obliged to Mr. Barling for giving them such an interesting address, but at the same time there were certain things which he had mentioned which he (Mr. Smith) differed from. His conviction was that cleanliness and letting the air get to the wound was much better than closing it up. He would not stitch a wound unless to save the common integument. He had tried both ways, and he had found that by allowing the granulations to form a wound healed quicker. Soft soap had been mentioned but there was nothing that made him more inclined to kick a man out of a stable than to hear that he had been using soft soap. It might be all-right to use it upon human subjects where there was no hair, but they could trace more cracked heels to the stable where soft soap was used than to others.

Mr. MERRICK said that their thanks were due to Mr. Barling for his interesting paper. His remarks on the treatment of wounds were mostly in regard to operative surgery. In their practice they had to treat wounds that were made, and it was to their interest to keep them open, and that was why he thought some members differed from Mr. Barling as to the sewing up of wounds. Where the common integument only was affected it was their duty to save as much as they could by sutures. It was their duty to keep the surrounding parts of a wound as clean as they could, with as little water as possible, particularly in sutured wounds because the wet rotted the stitches and predisposed the surrounding parts to disintegrate. He was rather pleased to hear what Mr. Trigger had said about tetanus. He spoke of the importance of healthy sanitary surroundings, and mentioned that on one farm four different animals were lost from tetanus after operations. The animals on this farm seems pre-disposed to tetanus.

Mr. BLUNT said there were many different opinions with respect to the treatment of wounds. He had always found that a wound with a good healthy discharge did well, and the less it was sewn up the better. He understood Mr. Barling to say that he often left a wound covered up for days together, but if they left a wound upon a horse covered up for four or five days there would be a very bad smell.

Mr. OLVER expressed his sense of the honour done them by Mr. Barling. Few of them, he thought, could disagree with Mr. Barling's methods of treating wounds, but there was no doubt that they, as veterinary surgeons, had very great difficulties to contend with, and they were not able to asepticise wounds to the same extent that Mr. Barling would. As to the remarks on abdominal surgery he said they had to deal with animals in which there was a great deal of abdominal surgery, and they found that there were idiosyncracies in species. Then came the question of dogs which Mr. Merrick had spoken of, but they knew that the treatment of wounds in dogs was unnecessary; the licking of the dog itself was sufficient. The question arose—was the saliva aseptic? These questions were very interesting. He had no doubt that in the abdominal treatment that Mr. Barling spoke of, if they could take up all the vessels it was a very distinct advantage, but veterinary surgeons, in cases they had to deal with, found it an impossibility. Interesting as it was to them to hear what was done in human surgery, it was impossible for the whole of it to be applied to animals. As to boracic acid he had found it very valuable indeed. At the present moment he was using it freely.

Mr. W. HUNTING regretted that he was not early enough to hear the first part of the paper. What he did hear led him to think that it was one of the most able expositions on the treatment of wounds that he had ever heard or read, but he had not gleaned from Mr. Barling exactly the same conclusions as the other speakers. He did not think that the paper showed that ascepticism was everything in the treatment of wounds. He thought it went to prove that whilst they must not neglect ascepticism, the minutest *details* of surgery where just as important now as they were in the days before germs were heard of. Of course he allowed that there *were* operations performed now which even Liston and other bye-gone giants could not do, or if they did be followed by a fatal termination. In Birmingham one could not keep going back to some years ago when Mr. Gamgee gave them an address in which he made a remark which should ever be remembered in surgery—that the greatest aseptic was vitality, and they should remember that the vitality of the tissues was as important as keeping out the germs. No doubt the safest thing was to keep out germs, but they could not always do this, and they must keep the wound in such a condition by all the little details of surgery as would be least favourable to septic complications. One point that marked a great distinction between the lower animals and man was the almost total absence of shock in the former. They could inflict tremendous injuries on the lower animals and there would be hardly any signs of shock. He had been told by an army surgeon that he had seen a 7 lb. round shot carry away nearly the whole of the molars of a horse but the horse put its head down and tried to eat grass., This absence of shock ought to be an extremely valuable factor to them. Then they came to the impossibility of securing animals and keeping them from moving and interfering with their wounds, but the principles were the same in the man as the animal. Mr. Barling was referring to the stopping of hæmorrhage when he (Mr. Hunting) came into the room. Years ago he used to believe if one made a wound the sooner he got it closed the better. Two or three cases had occurred to him which showed that if they wanted healing in a wound after they had made it and they could leave it a couple of hours they would get adhesion quicker. He mentioned a case that occurred in Mr. Cartwright's practice at Wolverhampton, in which someone had drawn a knife across the ribs of a horse. The wound was 2 feet long and gaping to the extent of about 15 inches. It was dry and all bleeding had stopped. He brought the wound together with pins. The muscular wound did not correspond to the lines of the skin wound. He somehow forgot about the case for a day or two, but when he went again the pins had cut themselves out and the wound was perfectly healed. A number of wounds in veterinary practice occurred in places where few injurious germs were to be found. Gravity had been referred to in the paper. Horses stood on four legs, and when there was anything wrong with them they would not lie down, and the swelling that resulted was a source of trouble. The best thing to do was to give exercise. So long as exercise could be given without tearing the wound open the exercise would facilitate the healing process. Compression above a wound was a thing which he was afraid veterinary surgeons did occasionally cause. They were apt to tie a bandage on as a ligature, and he believed that was the worst thing they could do. The remarks with reference to castration and spaying were extremely instructive. Amongst all the abominable dirt of a pig-stye one would think that all the pigs operated upon would die, but it was an unusual thing for any of them to die Pigs to be spayed were generally kept without food from the evening before the operation, and that he looked upon as a very impor-

tant matter. On the subject of castration he said that if they could not bring together the sides of the cavity from which the testicles had been removed, they could not do better than to make the opening as big as possible. Systematic asepticism was impossible in the castration of colts, and they must therefore adopt the least injurious methods. A free depending orifice to the wound, and decent surroundings to the animal were their safest methods.

Mr. MULVEY expressed his approval of the very valuable paper that Mr. Barling had given them. There was one remark that he should like to make. Speaking of the treatment of wounds in dogs, one gentleman had said that he believed the best way to treat them was to allow the dogs to lick them. He was opposed to that. If they kept the wounds dry and prevented licking they would have a far better result. With regard to boracic acid he was in favour of it, and had found it give exceedingly good results.

Mr. GILBERT BARLING in replying to the questions thanked those present very much for the kind way in which they had received his paper, and for the criticism passed upon it. He felt at the outset that he had a very difficult task to perform. He knew that the surgeon had some advantages that the veterinary surgeon could not obtain in the treatment of their wounds. For instance if a horse got a compound fracture of the leg they could not put him in bed. (Laughter). But despite the drawbacks which they suffered from, he thought the principles of wound treatment were practically the same, both cases, but whether the details were was another thing. He was very much struck by the case that Mr. Hunting mentioned where he closed a wound sometime after the injury was inflicted and after all oozing had stopped. That was an excellent thing. He was able to close the wound and no further oozing took place—an altogether most desirable thing, and an application of the great principle of the dry treatment of wounds. One or two speakers had dwelt on the questions raised in abdominal surgery. No doubt the cessation of hæmorrhage before the abdomen is opened and the immediate closure of all vessels when it was opened were amongst the most important features of abdominal surgery of the human subject; the suturing up of the peritoneal cavity so as to cut off all influence from the external world was the next. Although he insisted on the importance of these two details in human surgery he was not in a position to say whether they were as important in animals. They might do to one animal's peritoneal cavity what they dared not do to another. They might find this in the human race—in some of the nigger races for instance, he believed they were very bad subjects for certain kinds of surgery, but they were good for others. If a surgeon went to India he could crush for stone with impunity, but they dared not do that here. Mr. Parker had mentioned boracic acid and carbolic oil. Each had its place, and the mistake that the surgeon made who treated his own horse was that he did not know anything about the wound treatment of animals. On the question of tetanus he was perfectly convinced that it was due to the presence of a specific germ; that that germ lived generally in the soil, and hence it was they saw it he believed after certain operations with some frequency. He should say that in an animal operated on for castration or docking where the wound surface was likely to come in contact with the ground, especially ground recently disturbed, such a wound was more likely than another to be infected with the germ of tetanus. That raised a question during the discussion whether tetanus in some cases would not be prevented, possibly by covering up a part like the scrotum, or a docked tail, by dressing which would keep it from exposure to contact with the ground, which he believed was the constant source of tetanus germ. As to the use of soft soap he only used it for one purpose. After the shaving of the scalp or crown a little soft soap was used to scrub the part with and it was carefully washed off. There was no doubt it made an enormous difference whether wounds were made by the surgeon or made by accident, and most wounds coming under veterinary care were accidental, and often complicated. Animals had so much reparative power that it would heal almost anything. They had not the same power in the human subject; the veterinary surgeon might leave a large wound knowing it would granulate; he (Mr. Barling) knew that he should get something which might imperil life, and that marked one great difference between them. In ending his remarks he must thank them again for the very kind way in which they had received his paper. (Applause).

ROYAL VETERINARY COLLEGE VETERINARY MEDICAL ASSOCIATION.

The 176th ordinary meeting was held in the Theatre of the College, on Wednesday, March 1st, at 6.30 p.m. Present: Mr. Walker in the chair, Messrs. Wild, Tidey, M.R.C.V.S., 48 members, 2 visitors and the Assistant Secretary.

The minutes of last meeting were read and confirmed. Messrs. Lowe, Edie, Williams, Stanley and Gillard, were elected new members of the Association.

The chairman then called on Mr. W. H. Hunting to read his essay on "Injuries due to Shoeing." Following which a good discussion took place, in which nearly all those present took part.

On the motion of Mr. Dowell, a hearty vote of thanks was accorded Mr. Hunting for his valuable paper.

The usual vote of thanks to the chairman terminated the meeting.

E. E. SELDON. *Assist. Sec.*

EXTRACTS AND NOTES.

Veterinary Science.

Mr. John Malcolm, of Birmingham, attended at Chaddesley Corbett on Wednesday night, Feb., 22nd, to open a course of three lectures on Veterinary Science. Mr. Malcolm took for his subjects: Disorders of the organs of the horse, health and diseases, age of horses, etc. The lecture was a most valuable and interesting one and closed with a discussion. Mr. Malcolm showed a capital variety of coloured illustrations, together with a large collection of specimens. The class consisted of about 30 members and it is hoped that a larger number will attend the other two.

A Vacancy.

"W.P." writing to *The Farmer and Stock Breeder* says:—

I have got an insect on some of my lambs which causes them to pull their wool. The enclosed are some of them. Can you tell me how I can know if they are likely to torment them long, or if it is necessary to dip them? I have never seen such things on sheep before.—W.P.

The editorial answer states that the insects did not arrive, but that the querist had better use some sheep dip. Now probably a week would elapse between the detection of the "insects" and the advice being available. Is there no veterinary surgeon in "W.P.'s" district—if there is why is he not employed?

It seems strange that any intelligent man should be willing to wait a week for gratuitous advice when a day's delay means loss.

There is surely a vacancy for a veterinary surgeon in some districts or perhaps it is only a vacancy in the skull of an owner of sheep.

Outbreak of Glanders.

A horse has been found to be suffering from glanders at Warren's Hall Colliery, Rowley Regis. As many as eight other horses suffering from similar symptoms have died at the colliery during the last eighteen months, but it was not until the calling in of a Birmingham veterinary surgeon in the present case that the true nature of the disease was recognised. The County Council Executive Committee have under a recent order compulsory powers of slaughter.

PARLIAMENTARY.

In the House of Commons on Wednesday, 8th inst.:—

PLEURO-PNEUMONIA IN CANADA.

Mr. W. WHITELAW asked the President of the Board of Agriculture whether his attention had been called to a report, presented to the Canadian Parliament, declaring that no case of pleuro-pneumonia had existed in the Dominion for several years past; and whether he proposed to take any further action with regard to the importation of Canadian cattle in consequence of this report.

Mr. GARDNER:—I have received, through the Colonial Office, a copy of a report of a committee of the Canadian Privy Council, in which it is stated that the reports of the veterinary surgeons who have been engaged in an investigation of the matter establish that pleuro-pneumonia was not found in any of the localities whence the animals exported by the Monkseaton and Hurona were traced to have come, and further that the disease had never been known or heard of in any of them. The reports in question are equally positive in their declaration of such freedom from disease in relation to the whole of the Dominion. The report of the committee and other documents on the same subject are at the present moment under my consideration, and I hope in the course of a few days to announce the course which we propose to take in the matter.

TUBERCULOSIS.

Mr. W. WHITELAW asked the President of the Board of Agriculture if he could state the number of home-bred cattle whose carcases were condemned on account of tuberculosis during last year.

Mr. GARDNER:—The condemnation of tuberculous carcases on the ground that they are unfit for the food of man takes place at the instance of the medical officer of health or inspector of nuisances, in conformity with the provisions of sections 116 and 117 of the Public Health Act, 1875, and I possess no information with regard to the proceedings so taken.

CORRESPONDENCE.

REJECTED CANDIDATES.

SIR,

Your esteemed answer to my question quite surprises me, that an unsuccessful student may present himself as many times as he likes for any one examination is a disgrace, and the sooner a bye-law is passed preventing such a method of entering the profession the better; that a good student may be plucked once or twice I don't deny but any man who fails three times for any one examination is an unfit person to become a member, and should be dismissed the College, as he has evidently, to my mind, made a mistake in the selection of his avocation. In times like the present when the profession is greatly overcrowded there can be little excuse for allowing such men to keep presenting themselves time after time on the chance of fluking through. I am aware the dismissal of such men would mean a loss of collegiate and examination fees, but surely this ought not to prevent the Royal College doing its duty to the profession by refusing to re-examine any man who has been thrice rejected, and I trust the day is not far distant when some member of Council will have the courage to introduce a measure dealing with this subject.

IGNORAMUS.

THE FELLOWSHIP DEGREE.

SIR,

Mr. Gregg quite misunderstands the purport of the resolutions he alludes to in his letter of the 14th Feb., to *The Veterinary Record*.

It was with no idea of being thought original that those resolutions concerning the "Fellowship" were passed by the gentlemen named or they would scarcely have chosen to advocate a method of conferring degrees which has obtained for hundreds of years, as an example of their initiative originality.

However, if it please Mr. Gregg to consider himself original he is welcome to do so, and we duly acknowledge his claim to whatever honour may be contained in the suggestion that a Thesis instead of Examination should secure the Fellowship Degree. At the same time Fellows and Members, including the Editor of this journal, were sounded on this point long before Mr. Gregg expressed his views; we nevertheless disclaim any originality in the matter. We desired emphatically to record our opinion—that the Fellowship Degree be an honorary one; that it be conferred free; and that a Thesis, and not Examination be the criterion of merit.—Yours, etc.,

T. F. MACDONALD.

DIFFERENTIATION OF CASEATIONS.

A correspondent writes:—"Is there any distinct difference between the naked eye appearance of the caseation and calcification which take place as the result of the inflammation set up by strongyles in a lung, from those which take place as the result of tubercular inflammation in the same part."

I think this question is of great importance to inspectors of meat. Professor Williams in his "Veterinary Medicine" seems to thoroughly recognise the difficulty of distinguishing between the two conditions without the aid of the microscope. For my own part I can only endorse his remarks.

If any of your readers, who I am quite sure have had a fair amount of parasitic broncho-pneumonia during the wet autumn of 1892, will kindly enlighten an ignoramus I shall feel much obliged.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Capt. F. Smith, Messrs. A. S. D. Hitchcock, J. S. Hurndall, H. G. Rogers, J. B. Wolstenholm, W. F. Greenhalgh, J. Upton, Junr., A. Levie, E. E. Seldon, R. Voisin, T. A. Ford, "Protector," "Antigua Standard."

Several communications are unavoidably held over.